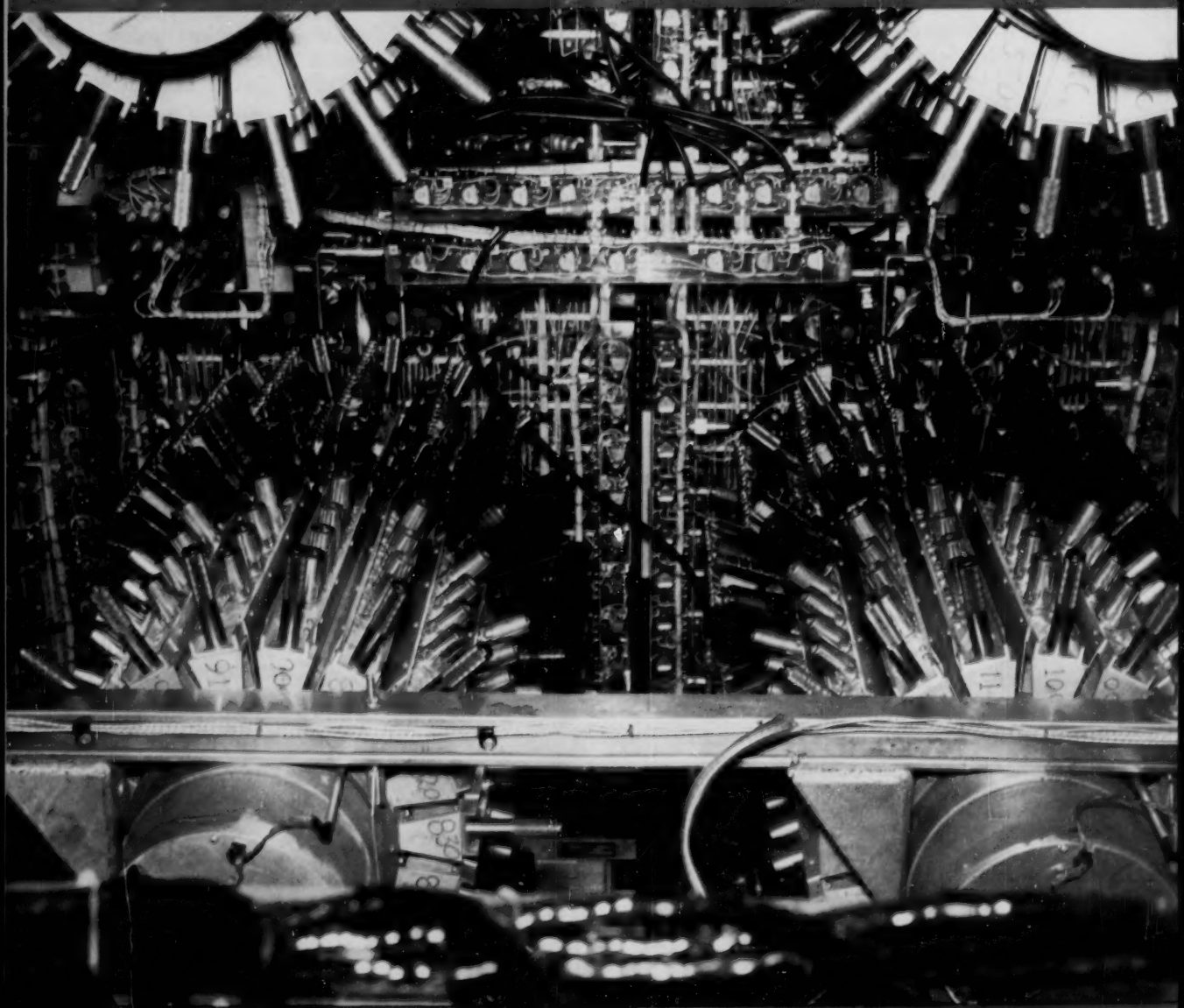
THE MAGAZINE OF

Standards



U.S. Viewpoint Important in International Work on ELECTRONIC COMPONENTS

September 1956

THE MAGAZINE OF
Standards

September, 1956 **Volume 27, No. 9**

In This Issue

Features

Views on Tools Help with Work on American Standards
By George M. Hargreaves 261

Standards Without Boundaries
By George F. Hussey, Jr 266

Some Observations on IEC 1956 Meeting
By R. C. Sogge 268

Standardization—Virtue and Necessity
By Clarence H. Linder 270

U.S. Viewpoint Important in International Work
on Electronic Components. By Leon Podolsky 272

Gas Cylinder Connections 282

News

Standards Are Everybody's Business
Program of the Seventh National Conference on Standards 276

Standards Engineers to Meet in October 278

What Others Say 279

News Briefs 282

Departments

What Is Your Question? 279

From Other Countries 280

American Standards Under Way. Status as of August 24 283

What's New on American Standard Projects 286

Standards Outlook. By Leo B. Moore 287

Published monthly by the
American Standards Association, Incorporated
70 East Forty-fifth Street, New York 17, N. Y.

Officers
H. Thomas Hallowell, Jr, *President*
Vice Admiral G. F. Hussey, Jr, USN (Ret), *Managing Director and Secretary*
Cyril Ainsworth, *Technical Director and Assistant Secretary*
G. P. Paine, *Director of Public Relations and Assistant Secretary*

Ruth E. Mason, *Editor* Sheila Dressner, *Production Editor*

Single copy 60¢. $7.00 per year (foreign $8.00). Schools and libraries $5.00 (foreign $6.00). This publication is indexed in the Engineering Index and the Industrial Arts Index. Re-entered as second class matter Jan. 25, 1954, at the Post Office, New York, N. Y., under the Act of March 3, 1879.
Opinions expressed by authors in THE MAGAZINE OF STANDARDS *are not necessarily those of the American Standards Association.*

Marginal Notes

National Standards in a Modern Economy—

It is 38 years since five engineering societies set up a committee to provide coordinated "American Standards" for the benefit of the country as a whole. Since that time standardization on a nationwide basis has expanded into fields that could not have been imagined by the men who organized the American Engineering Standards Committee in 1918. The committee itself is now an association that includes in its membership a cross section of all engineering fields in all branches of industry, whose representatives speak for American industry in standardization meetings abroad.

During most of those 38 years, Dr P. G. Agnew was the moving spirit behind the development of American Standards.

The changes that have taken place in standardization since 1918 are mirrored in a new book published this month. *National Standards in a Modern Economy* presents the various phases of standards as they exist today. It is an authoritative book. Each chapter is written by an outstanding authority on standards in his particular field. It is also a memorial to a man who gave outstanding service to standardization — Dr Paul G. Agnew. (For details, see back cover.)

Nuclear Standards—

Final action has been taken authorizing organization of the Nuclear Standards Board, voted on earlier this year at a meeting of ASA's Standards Council. Now, the letter ballot putting on record the vote of all members of the Council has been closed with overwhelming endorsement of the earlier decision to organize the new Board. Because action on standards for peaceful use of nuclear energy is considered urgent, organization of the Board is being completed as fast as possible and the first meeting will be held within the coming month. At its first meeting the Board will have for consideration recommendations on several proposed projects.

The National Conference on Standards—

A committee under the chairmanship of J. G. Henderson has developed the program for the Seventh National Conference on Standards being held in New York, October 22-24 (page 276). Mr Henderson is head of standards, specifications, and inspection services of the Department of Design and Construction, Carbide and Carbon Chemicals Company, South Charleston, West Virginia, and is chairman of the ASA Chemical Industry Advisory Board. Members of the committee are:

H. G. Arlt, Materials Specifications Engineer, Bell Telephone Laboratories, Inc, Murray Hill, New Jersey; Vice-President, Standards Engineers Society

Percy Bugbee, General Manager, National Fire Protection Association, Boston, Massachusetts

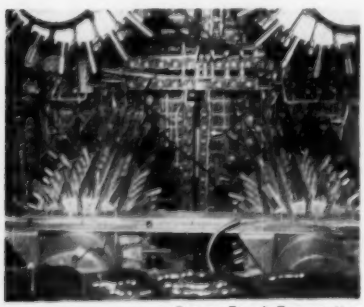
F. R. Fetherston, Secretary-Treasurer, Compressed Gas Association, Inc, New York, N. Y.; Chairman, ASA Conference of Executives of Organization Members

Vice Admiral W. A. Kitts, 3rd, USN (Ret), Manager, Atomic Products Study, General Electric Company, Schenectady, New York; Chairman, AIF Committee on Standards

T. E. Veltfort, Manager, Copper & Brass Research Association, New York, N. Y.; Vice-Chairman, Standards Council

J. Robert Walgren, Standards Engineer, Aluminum Company of America, Pittsburgh, Pennsylvania; Chairman, ASA Company Member Conference

The Front Cover—



Sperry-Rand Corporation

Electronic components in memory tanks of a Univac computer installed at Sperry Gyroscope. See page 272 for report of international committee on electronic components.

This Month's Standards Personality

HARRY L. DALTON, vice-chairman of the Board of Directors, American Viscose Corporation, has been one of the outstanding figures in advocating national standards for textiles. Last month during a press conference in the headquarters of the National Retail Dry Goods Association, he made the important announcement that American Viscose will grant its AVISCO label only to fabrics that have met or exceeded test requirements of American Standards L22. This statement will appear on the AVISCO labels for fabrics used for home furnishings and wearing apparel covered by the L22 standards.

Mr Dalton has been with the American Viscose Corporation since 1925, when he became a member of the Charlotte, North Carolina, sales office. A graduate of Duke University, he had taken post-graduate work both at New York University and at the College of Technology, Manchester, England.

During World War I, Mr Dalton was a member of the United States Air Service, and served overseas.

After three years in the sales office of American Viscose Corporation's Charlotte office, Mr Dalton was made manager of the office. He was elected to the Corporation's Board of Directors and assumed supervision of the entire southern sales area in 1946. In 1948 he was made director of sales and public relations, and was elected a vice-president later that same year. He has been vice-chairman of the Board since 1955.

During World War II, Mr Dalton worked for the government in Washington, D.C., in addition to his corporation duties. As Deputy Director of the Cotton and Synthetic Textile Division of the War Procurement Board, he placed his special knowledge and skills at the service of the Government.

Mr Dalton participates actively in many fields. He is a director of the Chemstrand Corporation; and is Trustee of the Philadelphia Textile Institute; of Queen's College at Charlotte, North Carolina; of Pennsylvania Hospital; and of Crozier Theological Seminary of Philadelphia. A prolific reader, he takes a special personal interest in libraries. He is a member of the Friends of the Library Committee both for Duke University and for North Carolina State College. His most important hobby is collection of historical American manuscripts, and he is well known for his collection of personal letters of historical personages, many of them presidents of the United States, from Washington to the present day.

Mr Dalton is married and has a son and daughter.

Whenever he has a few hours away from his work, his manuscript collection, and his family, Mr Dalton plays golf. He particularly delights in playing a foursome with friends whenever he has an opportunity, and enjoys a close, tense game.

The ASTE National Standards Committee

Chairman

John E. Rotchford, ASTE Chapter 25; Regional Manager, Bay State Tap & Die Company, Mansfield, Mass.

Vice-Chairman

Arthur E. Crom, ASTE Chapter 44; Consolidated Vultee Aircraft, San Diego, Calif

George F. Bryan, ASTE Chapter 69; Supervisor—Tool Design, GMC Truck & Coach, Pontiac, Mich.

Truman Coy, ASTE Chapter 89; Product Engineering Manager, New Holland Machine Division, Sperry Corp, New Holland, Pa.

Clyde L. Fanning, ASTE Chapter 68; Assistant Department Chairman, General Motors Institute, Flint, Mich.

F. J. Geoffroy, ASTE Chapter 77; President, Geoffroy-Lane, Inc, Denver, Colo.

Louis Jensen, ASTE Chapter 91; Vice-President and General Manager, Kelco Engineering Ltd, London, Ont., Canada

Paul Jones, Jr, ASTE Chapter 119; Project Superintendent, Northrop Aircraft Co, Anaheim, Calif

George J. McLaughlin, ASTE Chapter 88; Group Leader, Grumman Aircraft, Bethpage Aircraft, Bethpage, L.I., N.Y.

Harry J. Moffatt, ASTE Chapter 104; Tools & Supply Superintendent, Caterpillar Tractor Co, Joliet, Ill.

Joe Penn, ASTE Chapter 37; Gage Design Checker, Allison Division, GMC, Indianapolis, Ind.

Ralph I. Robbins, ASTE Chapter 113; Staff Engineer, Craig Systems, Inc, Danvers, Mass.

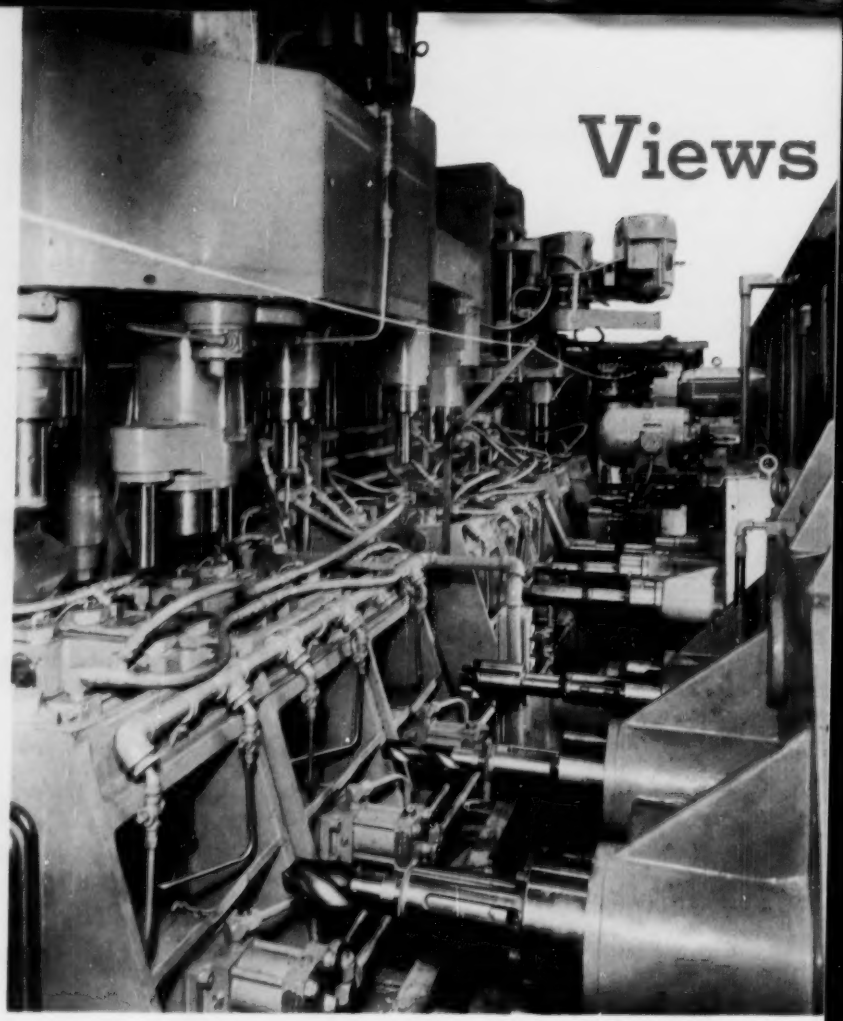
Dean F. Saurenman, ASTE Chapter 29; Senior Mechanical Engineer, Schlumberger Well Survey Corp, Houston, Texas

Denis L. Swan, ASTE Chapter 55; Superintendent, Ford Motor of Canada, Windsor, Ont., Canada

George A. Goodwin, ASTE Chapter 18; Chief Process Engineer, Master Electric Co, Dayton 3, Ohio

George Hargreaves, Staff Administrator, American Society of Tool Engineers, Detroit, Mich

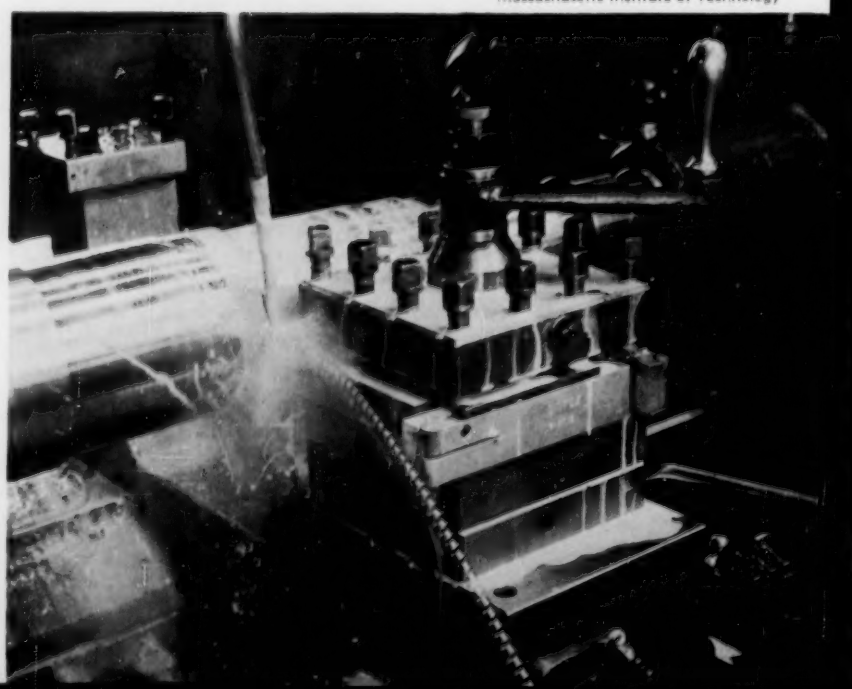
Views



Baker Brothers, Inc.

● **WITH THE ADVENT** *of integrated machining processes, the interchangeability of tool elements is of major importance. Standard spindle noses and self-holding tapers have been standardized so that production lines such as this one can operate economically.*

Massachusetts Institute of Technology



● **THE DEVELOPMENT** *of new cutting tool materials, such as aluminum oxide, requires continuous review of standards for machine tool elements to keep them abreast of industrial advances.*

on TOOLS help with work on American Standards

by George M. Hargreaves

General Electric Co.

ALTHOUGH *this steam turbine rotor is a nonstandard part, the carbide tools used in machining it are made from standard carbide tool blanks.*

MEN with production know-how, the members of the American Society of Tool Engineers, are becoming increasingly aware of the value of standards in the field of manufacturing. Through ASTE, they are carrying on what we consider to be an imaginative but down-to-earth program to bring their special needs and viewpoints to bear on the nationwide development of standards in many fields.

As a Member-Body of the American Standards Association, ASTE is represented on the ASA Standards Council, Mechanical Standards Board, and Graphic Standards Board. Through the National Standards Committee, ASTE sponsors two sectional committees, B52 on Classification of Materials for Tools, Gages, and Fixtures, and B67, on Industrial Daimonds and Accessories for Their Use. We are co-sponsors of Sectional Committee B5 on Small Tools and Machine Tool Elements and have representation on an additional ten ASA sectional committees.

Liaison between the 35,000 ASTE members and the American Standards Association and other organizations in the standards field is provided by the Society's National Standards Committee. Each of our 138 ASTE Chapters has a counterpart of the National Standards Committee. It is upon this broad base of Chapter Standards Committees that the ASTE Standards program is built. It has been our experience that much may be gained if the viewpoints of tool engineers from all over the United States and Canada can be coordinated and placed on record with other groups involved in the work of standardization.

One of the important phases of the ASTE standards program provides for analysis of American Standards already in existence by our Chapter Standards Committees. Their suggestions for improvements in the current standards are gathered by the National Standards Committee and forwarded to the ASA sectional committee responsible for

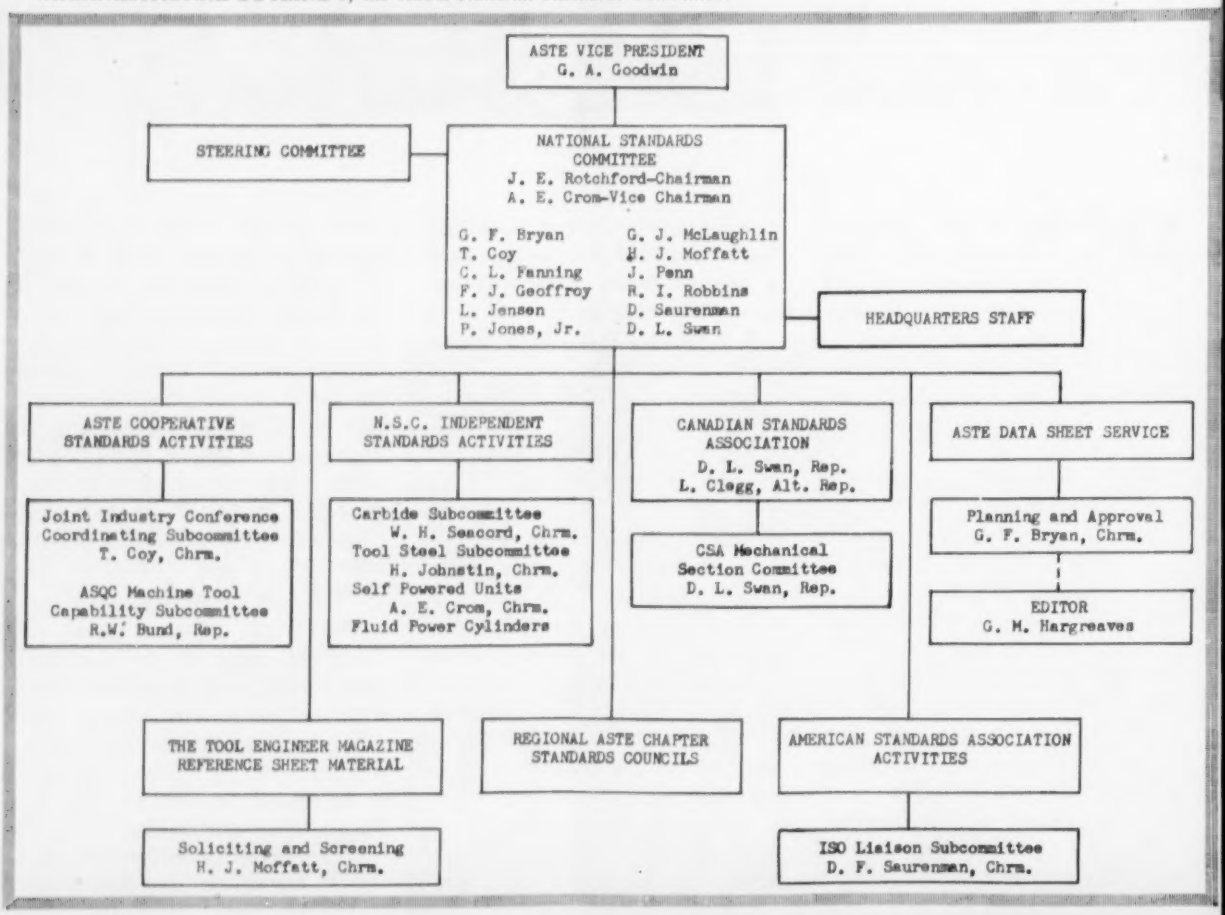
---

Mr Hargreaves is staff administrator and secretary of the National Standards Committee of the American Society of Tool Engineers. He represents the Society on the Joint Industry Committee (JIC), on ASA's Mechanical Standards Board, and on Sectional Committee B67, Industrial Diamonds and Their Accessories. He is also alternate representative on Sectional Committee B5, Small Tools and Machine Tool Elements, and on the Conference of Executives of ASA Organization Members (CEOM).

Lens-Art Photo

THE NATIONAL STANDARDS COMMITTEE *of the American Society of Tool Engineers (left to right) D. L. Swan; G. J. McLaughlin; Paul Jones, Jr; H. J. Moffatt; Joe Penn; Louis Jensen; G. M. Hargreaves, Staff Administrator; D. F. Saurenman; J. E. Rotchford, chairman; A. E. Crom, Vice-Chairman; G. A. Goodwin, ex-officio; R. I. Robbins, F. J. Geoffroy; G. F. Bryan; T. W. Black, Assistant Editor, The Tool Engineer; Truman Coy. Not present, C. L. Fanning.*

ORGANIZATIONAL OUTLINE *of the ASTE National Standards Committee.*



each particular standard. A booklet recently prepared by the National Standards Committee explains this project as follows:

American Standards are reviewed every five years in order that they may reflect the up-to-date practices of American industry. This review, carried out by the committee which prepared the original standards, is based on comments or criticisms which ASA has received relative to the standard under consideration. When no comments are received during a five-year period, it is generally assumed that the standard is satisfactory to all branches of industry. The standard is then reaffirmed without change.

Often, however, the reason for the lack of comment on the particular standard is that this review procedure is not widely known. Through our review project, not only is the tool engineer's knowledge and use of current American Standards broadened, but also there is less chance that reaffirmation will be given by default to standards that may not be particularly useful to tool engineers in their present form.

Under the ASTE standards review project, it is not our intention to criticize merely for the sake of having something to say. When a standard is completely acceptable to tool engineers, the Society informs the responsible sectional commiteee that the standard is being used as is.

The procedure for review of American Standards by ASTE Chapter Standards Committees is as follows:

1. The Chapter Standards Committee selects an American Standard of interest to its members.
2. This selection is submitted, with the number of members of the standards committee, to ASTE National Headquarters.
3. Sufficent copies of the standard selected are purchased by ASTE from the American Standards Association to supply each member of the committee with one copy. This material is forwarded to the chairman of the Chapter Standards Committee.
4. The standard as published is reviewed by the entire Chapter Standards Committee to be sure that each member thoroughly understands the entire standard.
5. Committee members contact as many manufacturers and users of the product described in the American Standards as are conveniently available in their locality. The purpose is to determine whether or not the standard is being used and whether or not it could be improved upon. Wherever possible, this contact is by personal interview.

Early this year a meeting of the Steering Committee of Sectional Committee B67, Industrial Diamonds and Accessories, was the setting for presentation of an award by the Industrial Diamond Association of America, Inc, to the American Society of Tool Engineers. The award was in recognition of the service ASTE had given the industrial diamond industry by sponsoring the Industrial Diamond Symposium in March 1956, and in recognition of the Society's cooperation with the Industrial Diamond Association "through these many years in the fields of technical education, exhibitions, and standardization." The Industrial Diamond Association of America is co-sponsor of Sectional Committee B67.

6. The Chapter Standards Committee is brought together again to discuss criticisms which may have arisen in step 5. A revised standard, correcting most of the problems presented by the current issue, is prepared.
7. If it is considered necessary, the committee members then go back to industry to determine acceptance of the revised standard.
8. A complete report is then submitted to the ASTE National Standards Committee, listing the companies and individuals contacted, and outlining comments received on the original standard and suggestions for revising the current American Standard.
9. Throughout this program, all members of the local Chapter are kept informed of the project and are invited to submit whatever comments they may have on the standard under consideration. By word of mouth, Chapter Bulletins, and monthly meetings, Standards Committee members stir up as much interest as possible in the review project. We believe that the broader the base of the criticism, the more useful it will be to ASTE and to the American Standards Association.

Work on American Standard B5.25-1950, Punch and Die Sets, is an outstanding example of what can be done by an ASTE Chapter Standards Committee. During the years since this standard was originally written, the Technical Committee which had prepared this standard became inactive. Our Toledo Chapter Standards Committee undertook a review. It made a number of tentative recommendations and after careful study, followed through with a final report and recommendations (page 264). This report was submitted to the American Standards Association and was forwarded by ASA to Sectional Committee B5. This committee, on Small Tools and Machine Tool Elements, is responsible for the standard and has responsibility for keeping it up-to-date.

Upon receipt of the Toledo Chapter Standards Committee's review, the chairman of B5 appointed a new committee to work on the standardization of punch press tools with an ASTE member as its head. This Technical Committee was given the ASTE report as its first order of business and the group is now engaged in a thorough review of the 1950 edition of American Standard B5.25.

Other ASTE criticisms have been similarly received by ASA sectional committees. The Society has been assured by ASA and by the sponsoring bodies of several of these committees that such criticisms will be well received and will definitely be considered in the next regularly scheduled review. In some cases standards will be brought up for review before the five-year period has elapsed if ASTE criticism of the current standard justifies immediate action.

As ASTE Chapter Standards

THE FINAL REPORT *and recommendations submitted by the Toledo Chapter Standards Committee. The significance of this report is discussed on page 263.*

Committees become more familiar with American Standards, we receive many requests to initiate standards on particular products and processes. The National Standards Committee is coordinating and cooperating with local groups in the investigation of original standards in such fields as optical tooling, jigs, fixtures and templates, piercing punches and die buttons, machine tool installation, and self-powered units for drilling, tapping, boring, and grinding.

Typical of these projects is our investigation of self-powered units. These units are the building blocks of which modern automated machines are built. By standardizing mounting dimensions, stroke, and capacity of such self-contained units, it would be possible to replace easily, or interchange, the individual units of a large automatic transfer machine. Thus it would be unnecessary to hold up an entire production line awaiting a major replacement or repair job.

A steering Committee, consisting of National Standards Committee members, will assign portions of the detailed investigations on this project to individual ASTE Chapter Standards Committees or to groups of standards committees. When these investigations have been completed, compiled, and analyzed, ASTE will be ready to submit a formal proposal to the American Standards Association requesting the standardization of self-contained units for automation equipment.

The National Standards Committee is particularly proud of the work

AMERICAN SOCIETY of TOOL ENGINEERS

TOLEDO CHAPTER NO. 9 — TOLEDO, OHIO

September 20, 1955

CHAPTER #9 STANDARDS COMMITTEE REPORT ON A.S.A. STANDARDS FOR PUNCH AND DIE SETS

After an extensive study of the catalogs of eight major punch and die set manufacturers and the ASA Standard B5.25-1950, the ASTE Chapter #9 Standards Subcommittee is ready to make its final summations.

Our study is based on the ten point check of conformance noted in the enclosed chart. Only three manufacturers conform wholly and others partially or not at all to ASA Standards. The eight die set manufacturers whose catalogs were studied are noted in the chart.

The Committee recommends the following for consideration by the ASA Standards Committee:

On page 8 of ASA Standards an accurate dimension from the center line of stem to back of the die holder should be considered to help the diemaker in making a layout. "Overall dimensions" could be standardized to facilitate the selection of a die set for a certain size press.

We also suggest the following recommendations that were presented in the preliminary report of January 11, 1955:

1. Die set manufacturers should use same letters in dimensioning die sets. (The dimensioning code should be the same.)
2. They should use a common numbering system for catalog identification of sets. This is easy and a must.
3. There should be ASA Standards added on:

   Shoulder guide pins
   Commercial guide pins
   Bushings for commercial guide pins
   Bushings for shoulder guide pins

4. There should be ASA Standards on die springs. These should cover physical (dimensional) characteristics, not metallurgical. These Standards should also include a catalog numbering standard, ie;

   #37-2-12 could be a 37% deflection spring to work in a 2" hole and with a 12" free length.

5. It should be noted that the five year transition period referred to on page 9 of the ASA Standards #B5.25-1950 with regards to die area is now up. Some companies are now sending literature indicating changes to be in conformance.

Yours truly,
Joseph Hojnacki

	DIE SETS				GUIDE POSTS (PRECISION)			GUIDE POSTS STEEL BUSHINGS (PRECISION)		
	1	2	3	4	1	2	3	1	2	3
Baumbach	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO
Danly Machine Specialties	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO
Detroit Die Set	YES	NO	YES	YES	YES	YES	NO	NO	NO	NO
Die Supply Company	NO	NO	NO	NO	YES	NO	NO	YES	NO	NO
Lempco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Producto	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Standard	NO	NO	NO	NO	YES	YES	YES	YES	YES	NO
Union	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

DIE SETS
1. Does set manufacturer claim conformance with A.S.A. Standards.
2. If not does he specify tolerances. (See page 7)
3. Do they conform to A.S.A. Standards.
4. Do die set sizes conform to A.S.A. Standards.

GUIDE POSTS (PRECISION)
1. Does manufacturers nominal dimensions conform.
2. Does tolerance of ground diameter ("B" dimension) conform.
3. Does tolerance of lapped diameter ("A" dimension) conform.

GUIDE POSTS BUSHINGS (STEEL) PRECISION
1. Do nominal dimensions conform.
2. Does tolerance of I.D. ("A" dimension) conform.
3. Does tolerance of O.D. ("B" dimension) conform.

Tool Engineers in ASA Work

G. F. Bryan represents the American Society of Tool Engineers on ASA's Standards Council, with J. E. Rotchford as alternate.

Representatives on the Mechanical Standards Board are G. M. Hargreaves, ASTE, with W. Moreland, Vice - President - Manufacturing, F. E. Myers and Brothers Company, Ashland, Ohio, and J. Penn, Allison Division, General Motors Corporation, Indianapolis, Indiana, as alternates. H. J. Moffatt, Superintendent of Tools and Supplies, Caterpillar Tractor Company, Joliet, Illinois, represents the Society on the Graphic Standards Board.

The Society holds the sponsorship for ASA Sectional Committees B52, Classification of Materials for Tools, Gages, and Fixtures, and for B67, Industrial Diamonds and Accessories for Their Use. C. L. Fanning, representing ASTE, is chairman of Committee B67. In addition, the Society is co-sponsor of Sectional Committee B5 on Small Tools and Machine Tool Elements.

The Society is also represented on the following sectional committees:

B1 Standardization and Unification of Screw Threads
B3 Ball and Roller Bearings
B4 Allowances and Tolerances for Cylindrical Parts and Limit Gages
B5 Small Tools and Machine Tool Elements
B6 Gears
B11 Power Press Safety Code
B32 Wire and Sheet Metal Gages
B46 Surface Quality
B52 Classification of Materials for Tools, Gages and Fixtures
B67 Industrial Diamonds and Accessories for Their Use
C85 Standardization of Terminology for Automatic Controls
Y14 Drawing and Drafting Room Practice

which is being done by its Carbide Subcommittee. This group, under the chairmanship of W. H. Seacord of the International Harvester Company, has submitted a proposed standard on single point tools of sintered carbide to Sectional Committee B5. This proposed standard, which represents almost two years' work, is now being processed as a tentative American Standard. The NSC Carbide Subcommittee is now proceeding with an agenda which includes carbide throw-away inserts, drill and reamer blanks, milling cutter inserts, and shapes and forms of solid carbides. As each proposed standard is completed, it will be offered as a "carbide tool addendum" to the current American Standards on different types of tools—twist drills, reamers, milling cutters, etc. None of these American Standards now contain provisions for carbide tools.

Not all of the projects under the jurisdiction of the National Standards Committee are directly related to the American Standards Association. One NSC subcommittee is currently preparing a manual on tool steel classification by end use. This manual is intended to serve as a guide to tool engineers, who are generally not metallurgists, in selecting AISI Tool Steel Grades for specific applications.

In cooperation with the Canadian Standards Association, a group of our Canadian Chapter Standards Committees have undertaken a project to combine Joint Industry Conference Standards on hydraulic, pneumatic, and electrical equipment for machine tools into a machine tool installation standard. The resulting standard will be made to concur with existing provincial and national electrical codes and should prove most useful to machine tool builders and Canadian manufacturers.

Three additional activities under the supervision of the National Standards Committee are of interest to ASTE members, although they cannot be classified specifically as standards. These are soliciting and screening of Reference Sheet material for *The Tool Engineer* magazine; publication of the ASTE Data Sheet Numerical Index; and the planning and approval of all material published by the ASTE Data Sheet Service.

The Society's monthly publication, *The Tool Engineer*, offers these tear-out reference sheets as material which should be available in handbooks but is so new that it has not yet been included. Company and industry standards are a source of much of this reference material, hence the National Standards Committee's interest in their publication.

The ASTE Data Sheet Service provides manufacturers of tools and accessories an opportunity to supply technical information on their products to the ASTE membership. A subcommittee of the National Standards Committee provides editorial assistance for the Data Sheet Service staff in selecting material for publication and maintaining the noncommercial format of the publication. The Data Sheets are prefiled under an index number which is based on the U.S. Government's Standard Commodity Classification System. The ASTE member maintains a set of Data Sheets which are filed according to product. In this way, he may easily refer to one section of his Data Sheet binder for specifications on a given item which is produced by several manufacturers. The National Standards Committee supplies each member with a 52-page index with which he may file and locate hundreds of ASTE Data Sheets of interest to the tool engineer.

The program of the ASTE National Standards Committee for 1956-1957 is under the guidance of Committee Chairman John E. Rotchford, Regional Manager of the Bay State Tap & Die Corporation, Mansfield, Massachusetts. NSC Vice-Chairman is Arthur E. Crom, Tool Engineer for Consolidated Vultee Aircraft in San Diego, California; and ASTE Vice-President George A. Goodwin acts as ex-officio member of the committee. Mr Goodwin is Chief Process Engineer of the Master Electric Company in Dayton, Ohio.

Standards

G. G. Vuarchex, Geneva

THE INTERNATIONAL CENTER, *new headquarters of the International Organization for Standardization.*

JUST off the plaza leading to the Palace of Nations, where Wilson's League of Nations once met, and where the United Nations now have their European headquarters, is a new building—The International Center, erected by the municipal and cantonal authorities of Geneva at 1 rue Varembé. Here on the fifth floor are housed the International Organization for Standardization, comprising the national standards bodies of 37 nations, and its autonomous electrical division, the 52-year-old International Electrotechnical Commission with 31 national committees.

Here the ISO entered the field of nuclear energy by agreement of its Council, governing body of the organization, which met July 16-20.

The Council agreed that it was urgent that work be begun on world standards for the use of nuclear energy in industry. The first step will be to establish a technical committee representing all interested member bodies. Initial work will be divided among three subcommittees to be set up immediately, for terminology, safety standards for protection of persons from hazards of nuclear radiation, and standards for safe and effective operation of reactors.

The International Electrotechnical Commission at its recent meeting in Munich, Germany, developed a statement for the United Nations on electrical standards for the peacetime uses of atomic energy (see report by R. C. Sogge, page 268). The Commission stated that it wished "to make clear its anxiety to press forward in these fields to help forward the development of nuclear power by such action."

Sir Roger Duncalfe, president of the ISO, told both ISO and IEC: "This great power which has been given to man can, if its peaceful constructive uses are developed and its destructive uses avoided, lead to a forward development and an expansion greater than anything mankind has known in the past.

"It is new work, it will be difficult work," he cautioned, "but if we pur-

Without Boundaries

A report on the meeting of the Council of the International Organization for Standardization, the world standardizing body, at Geneva, Switzerland,
by Vice Admiral George F. Hussey, Jr, USN (ret), managing director of the American Standards Association and United States member of the Council.

sue it now, we shall have one great advantage we have lacked in many of our other fields of work; we shall be entering the field when the techniques are new and are only just in the process of development, when the techniques and even the terminology have not crystallized, thereby avoiding the great difficulty of having to take apart what has been done before starting to build together."

The UN has been informed of the plans of the ISO and the IEC in the field of nuclear energy and of their willingness to cooperate with other groups interested in and needing standardization.

The combined work of both organizations will cover about the same basic areas as the standards work of this country now going on under the procedures of the American Standards Association, the U.S. national standards body.

Work has begun on developing American Standards in six major areas: general or administrative standards, such as those for terminology, symbols, and color codes; radiation protection of people and property; standards for nuclear safety, such as site location, transportation, and storage; standards for materials; and standards for equipment and for processes.

Another new project of ISO will be to enlarge the work on agricultural standards. The organization will launch immediate studies to determine which problems are of urgent concern to international trade.

Two recommendations for international standards from the Committee on Shipbuilding Details for Inland Navigation—Rivets for Hatches and Sprocket Wheels (wildcats for windlasses) were approved for adoption as ISO recommendations at the meeting.

As the largest manufacturing country in the world, the United States gains more from international standards than any other country. If our exports do not conform to these standards they are often unmarketable, as many cases have proved.

To sell an American machine abroad involves in the majority of cases the establishment of a replacement parts service. Often this means prohibitive costs and no sale. In other cases a sale is impossible because an American machine will not fit other equipment made elsewhere.

It is especially important for this country of assembly-line producers to have a voice in international standards, but whether or not the United States participates, world standards will be developed—standards that may put the U.S. out of the race for world trade.

Participation in these projects, however, offers a number of dividends to American industry, such as:

1. Opening of new foreign markets
2. Preventing the loss of existing foreign markets as a result of new foreign standards
3. Injecting the United States technical viewpoint into the specifications and standards being developed in the ISO
4. Keeping American industry informed on the latest technological developments in other countries.

Companies, industries, trades, and professions having a stake in the international exchange of tools and knowledge may send delegates to the ISO through the American Standards Association.

Ultimate authority for ISO is vested in the General Assembly in which delegates of all the member-bodies (national standards bodies) meet triennially.

Between meetings of the General Assembly, however, the Council acts as a Board of Directors. The General Secretary, with offices at Geneva, handles the administrative affairs of the organization.

At present the following nations have members on the Council: Belgium, Finland, France, Germany, India, Italy, Portugal, Spain, United Kingdom, USSR, and the USA.

United States interest in both ISO and IEC is represented by the American Standards Association.

Some Observations on

"We must standardize for the future as well as for the present," said Clarence Linder in presenting the Second Charles le Maistre Lecture before the International Electrotechnical Commission.[1] In this statement, he was reflecting up-to-date standards philosophy which holds that chaos resulting from lack of coordinated standards should be prevented and not cured.

Foreseeing the application of nuclear energy to peacetime purposes, the Committee of Action (governing body of the IEC) acted on this principle. At the Commission's meeting at Munich, June 26 to July 6, the Committee considered the problems that will face the electrical industry of the world when nuclear energy is put to greater use, and decided to start action immediately. The Committee recognized that it is necessary to proceed carefully as needs arise and as knowledge becomes available. However, the Committee members believe it will be a great advantage to enter the field while the techniques are new and in process of development, before they have crystallized. One of the first steps is to analyze the effect the peaceful use of nuclear energy may have on standards for electrical equipment and components and then to develop the new requirements that electrical equipment will have to meet under these new conditions. A number of items were selected as being particularly urgent. These are electrical measuring instruments (especially of the electronic type) for nuclear reactors; electrical components of servomechanisms; and electrical measuring instruments employed in the use of radio isotopes. It was decided to start work on these. In addition, plans are under way to begin work on terminology used in connection with production of electrical power from nuclear energy and on questions of protection of electrical equipment from radiation.

Recognizing the broad ramifications of the problem, the Committee of Action prepared a statement which it submitted to the International Organization for Standardization, its parent body, for transmission to the United Nations and the Office of European Economic Cooperation. This memorandum outlined the views of IEC on the need for immediate action and asked for suggestions from other international organizations. IEC has consultative status with the Economic and Social Council of the United Nations.

Standards for the future were also considered in connection with automation. Analysis showed that automation depends on electricity for performance; on standardization for economic possibility; and will accelerate work on standardization. Therefore, each IEC Technical Committee is being asked to con-

[1] See page 270 for excerpts from Mr Linder's address.

1956 Meeting Munich, Germany

by R.C. SOGGE

Above, left to right—The Deutches Museum, Munich, Germany, headquarters of IEC's 1956 meeting; Banquet in the Deutches Museum; Prof Dr Vieweg, German delegate, addressing the Committee of Action.
Left—R. C. Sogge presenting illuminated scroll, on behalf of the American Institute of Electrical Engineers, to Yugoslavian committee in charge of Nikola Tesla Centenary Celebrations. Immediately behind Mr Sogge is Dr Nils Bohr, Danish physicist. In background are other speakers and officials.

sider possible opportunities for automation and to incorporate requirements in their recommendations concerning terminology; standardization of products, parts and materials for increased productivity; and standardization of data processing for recording of results and programming of work sequences.

Several national committees had called attention to the difficulty of divorcing safety requirements from other requirements for quality and performance. This question was considered by the IEC Subcommittee on Safety Regulations, which had been set up to advise the Committee of Action. The committee came to the conclusion that it would be desirable for IEC to specify safety features separately so far as this is possible in its recommendations because of the adoption of safety requirements in mandatory rules and regulations. The subcommittee is being continued as a permanent advisory committee on safety, with H. A. R. Binney, United Kingdom, as chairman, and the German national committee furnishing the Secretariat.

Other important actions taken by the IEC have been reported in the August issue of THE MAGAZINE OF STANDARDS. One of the most important of these was the decision to name the unit of magnetic flux density in the Giorgi (MKS) System, "tesla" in honor of Nikola Tesla. Following the IEC meeting, a number of IEC delegates visited Belgrade, Yugoslavia, where they attended the Nikola Tesla Centenary celebrations. On behalf of the American Institute of Electrical Engineers, R. C. Sogge presented an illuminated scroll to the Yugoslavian committee in charge of the Tesla celebration.

The 750 delegates from 27 countries who attended the General Meeting of the IEC and the meetings of the IEC technical committees, were well entertained in addition to the hard work they did in the many committee meetings.

An extensive program of technical visits to factories and power stations supplemented the technical meetings. At the official banquet in the Deutsches Museum, the delegates were welcomed by Mr O. Bezold, Minister of State; Professor Dr-Ing. J. Biermanns, vice-president of the German committee; and Professor Dr R. Vieweg, president of the German national committee. Receptions in honor of the delegates were held by the Administration of the Town of Munich and the Bavarian State Government. By invitation of the Government of the German Federal Republic, the delegates attended a special performance of Mozart's opera, "The Seraglio." This was followed by a reception for the heads of delegations and their ladies given by the Minister of Trade of the German Federal Republic, Professor Dr Erhard.

Four excursions into the Bavarian Alps by special train and motor coach were organized on Sunday, July 1. An interesting feature of these excursions was the fact that the car used for checking railroad performance by the German Federal Railways was coupled to the special train and made available for technical inspection visits by the delegates.

Two pleasant evening parties were given, one in the famous Hofbrauhaus by the Munich Section of the Verband Deutscher Elektrotechniker, the other on board ship on the Starnbergersee, by the Bavarian State Ministry for Trade and Tourism.

The ladies were well entertained by a Ladies Reception Committee, under the chairmanship of Her Royal Highness Prinzessin Pilar von Bayern.

Following committee meetings, a farewell reception at the Seehaus, in the "Englischer Garten," on the afternoon of July 6, brought the meeting to a close.

Standardization— Virtue and Necessity

Excerpts from the Second Charles A. LeMaistre Memorial Lecture presented by Clarence H. Linder, Vice-President-Engineering, General Electric Company, before the International Electrotechnical Commission, The Rathaus, Munich, June 29, 1956.

To attain its greatest success, the industrial process should make available goods and services which are—without any artificial economic restrictions—customer-desired.

For the field of standards, customer requirements and conditions create a dilemma.

Can the customer's desire to buy exactly what he wants (and very often he deliberately wants something at least slightly different from what his neighbor has) be reconciled in any way with the advantages of uniformity?

The [International Electrotechnical] Commission has proved very well that advantageous reconciliation of difference into an enthusiastic community of interest is possible, particularly in two aspects of customer requirements.

First, the customer's desire to know exactly what he can expect from the equipment he is buying is universal. Here the IEC has attained a reputation to be proud of for its work in the cause of common terminology and units of measurement, of established criteria of excellence, and of uniform tests to verify performance. This is as it should be; the customer ought to be able to make his purchase with assurance that the manufacturer's commitment regarding performance will meet the specifications, irrespective of the point of use and the language spoken there. Standards in this sense literally become an international language of agreement — transcending differences in native tongues.

Second, the compromise between completely individualistic customer requirements and the advantages of uniformity has been a concern of this Commission from its beginning. Your original work to classify electrical machinery was undertaken, and I quote, "for the mutual convenience of customer and manufacturer." The extension of customer's convenience is a matter which demands increasing vigilance and cooperation from all of us associated with the industrial process.

In consumer goods, for example, this extension would require reopening some of our completed files of admirably exact standards for the purpose of combining many into a few. The process would provoke many wrestling matches with tradition, but it would be well worthwhile. It could lead, for example, to the customer's being able to buy an electric iron and use it to his satisfaction wherever he wished. It would mean that difference in voltages, frequencies, details of connecting devices, and all the other minutiae which now plague him if he moves out of his own house would be resolved in his favor. It would mean, in short, that we had accomplished sooner, rather than later, one kind of standardization which must come to pass in a world in which technological progress in transportation and communication is making next-door neighbors of us all.

If we do not give full and careful attention to the long-range requirements of the customer in both our world and domestic markets, we will be detrimental to his interests and thereby betray our own interests — at the national economic level, at the industry level, and at the level of our own particular enterprise.

The "mutual convenience" of both the customer and the manufacturer is nowhere more clearly evident than in the way in which good standards make it possible to take advantage of the well-known cost-volume relationship.

The relationship between volume and unit cost is fundamental in a free economy. The industrial process must either achieve wider distribution at increasingly favorable price levels, or it will stagnate. It can easily be seen, however, that the benefits which result from increased volume are accompanied by greater investment and decreased flexibility of the production facility. Thus they not only result from, but are also dependent on, the higher volume of production, which can only be achieved through standardization and only in markets which are not subject to artificial limitations.

Clearly, s t a n d a r d s activities which lead to simplification — that is, fewer models, easier assembly, greater production — contribute greatly to our ability to take advantage of the unit cost-volume relationship. Standardizing on dimensions, on tolerances, and on the characteristics of purchased materials is one familiar contribution. So is the work which reduces the variation between component parts and sub-assemblies and permits flexible interchange among them.

Simplification through standardization is a basic responsibility which the individual enterprise cannot

shrug off onto someone else's shoulders. Standards bodies at industry level, national level, and international level can help tremendously, largely by recording areas of common agreement and by teaching the need for this kind of work. But let us not forget that the individual enterprise must do the real work.

Tradition and resources have significant effect on the optimum combination of price, performance, attractiveness, and features in the product. The established attitudes of mind held by customers, by entrepreneurs, by labor and by engineers will vary throughout industries, and from country to country. Similarly, the availability of the resources of materials, power, and competence will produce variations to be taken into account.

These are forces which make strong demands upon the willing spirit of co-operation in standards work. At any given time, they represent boundary conditions within which we work for agreement; and they have a certain potential emotion and controversy. One man's tradition may seen to another to be obstinate prejudice. What one does or fails to do because of limitations of his resources, another may consider backward or short-sighted. What seems essential to our standardization efforts is to identify objectively — and quickly — the points where these factors impinge on a particular standards problem, and then appraise the possible areas of agreement. Once this appraisal is made, the process of courteous, objective reconciliation can proceed along more promising lines.

Technological change has become an over-riding force in the industrial process.

We in industry share large common funds of technology, drawing upon them as we need, and contributing to them as we are able. We know, of course, that these funds are dynamic. In order to maintain them and permit their growth, we have always needed to provide equally dynamic, regenerative ways of defining terms and exchanging information.

Within the last generation, however, we have seen the meaning of "dynamic" acquire great new emphasis. New technology is pressing in upon us; yesterday's technological advance may render today's practice obsolete, in whole or in significant part. In this situation a new emphasis for standards activity suggests itself. The raw material with which you and other standards bodies work is essentially a specification, but with two peculiar values. First, it accurately describes a given result and the methods of verifying that result; second, it has received and passed some amount of impartial scrutiny. Now it would seem that the prompt exchange of these specifications alone, prior to and irrespective of any recommendation or adoption by common consent, could aid materially in speeding up the vital exchange of technical information. It is extremely encouraging to know that this Commission recognizes this new potential contribution.

Today the kilowatt bids fair to be superseded by the megawatt in the vocabulary of the man in the street; the platinum-iridium bar now has a wavelength for a rival. So do even the most familiar guidemarks change. To contribute in even the smallest degree to logical, objective, and formal appraisal of the results of scientific and technological progress is to do enormous service for those whose goal is the translation of technology into useful goods and services. "To know what problems are generally agreed to have been solved . . ." to "crystallize the state of knowledge as recognized at the time . . . " these are objectives in the ISO charter. With respect to these objectives, the work of each of the ISO technical committees assumes new dimensions.

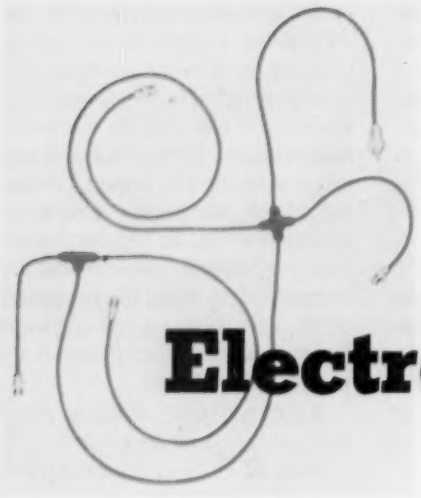
Any industrial enterprise — whatever its form and regardless of the particular national economy in which it originates — is at great risk when it fails to recognize that its continued existence in a highly competitive world depends upon continuing and perceptive appraisal of its manufacturing methods and its product designs in the light of rapidly changing technology. Changing technology can overthrow tradition. It will shift the customer's requirements. Technological change can completely and abruptly realign the relative importance of resources available to us, as witness nuclear fuel for electric power. And, of course, it determines the parameters of the cost-volume curve. Dynamic technology, therefore, demands dynamic standards.

To obtain truly dynamic standards, we must do two things.

First, at all levels of standardization we must learn to regard every standard we adopt, not as a law of the Medes and Persians, but rather as a record of the currently optimum method or condition. We should expect standards to change — some will change slowly perhaps, but a great many will change very rapidly. We must build the mechanism to revise them promptly in order to record the newer, better method or condition. What must be avoided, if technology and the industrial process are not to be circumscribed, is the creation of standards for standards' sake.

Second, we must standardize for the future as well as for the present. It is unfortunately only too true, as you well know, that standards have often been called upon to correct the chaos of the past. It is equally true that we have some chaotic areas which have never been corrected — and the longer we put off the task the more difficult it becomes. Certainly from now on we must strive to produce standards which will avoid creating chaos in the first place. To do this, I think we must project our standards thinking ahead in terms of tomorrow's technology and its potential goods and services, not in terms of the goods and services of today or yesterday. It seems evident that some quite definite portion of our effort ought to be concerned, for example, with such critical areas as the nuclear and electronics technologies, where new products and vis-

(*Continued on Page* 283)



U. S. viewpoint important in international work on

Electronic Components

by LEON PODOLSKY

THROUGH experts furnished by their companies and assisted by special financial support provided by the Radio-Electronics-Television Manufacturers Association,[1] the U.S. delegation to meetings of IEC Technical Committee TC 40 and its subcommittees was able to present effectively the viewpoints of the U.S. electronics industry on a wide and challenging list of international standards covering electronic components. The U.S. was well represented at the meetings of both the technical committee and its subcommittees held at Munich, Germany, June 26 to July 6.

More than in any other year in which delegates from the USA have participated it was evident this year that the Secretariat of the technical committees and the other national delegations are leaning more and more heavily on U.S. technical guidance and opinion. However, we have some things to learn from the other delegations. On some subjects they wish to write standards to much more rigid performance levels than are common in U.S. practice, indicating a higher level of performance available in standard commercial components.

In all cases, the major U.S. technical positions were carried, although it cannot be expected in such diverse technologies to get universal agreement on all details. A striking technical fact of these sessions is the apparent abandonment by several nations of existing or proposed national standards on some items in favor of adoption of the IEC standards developed by these committees.

In the six months prior to the Munich meetings, U.S. committees of experts on each agenda subject, working through ASA Committee C83 and its sponsor, RETMA, developed the technical consensus and engineering recommendations which formed the basis for the positions taken by the U.S. delegates.

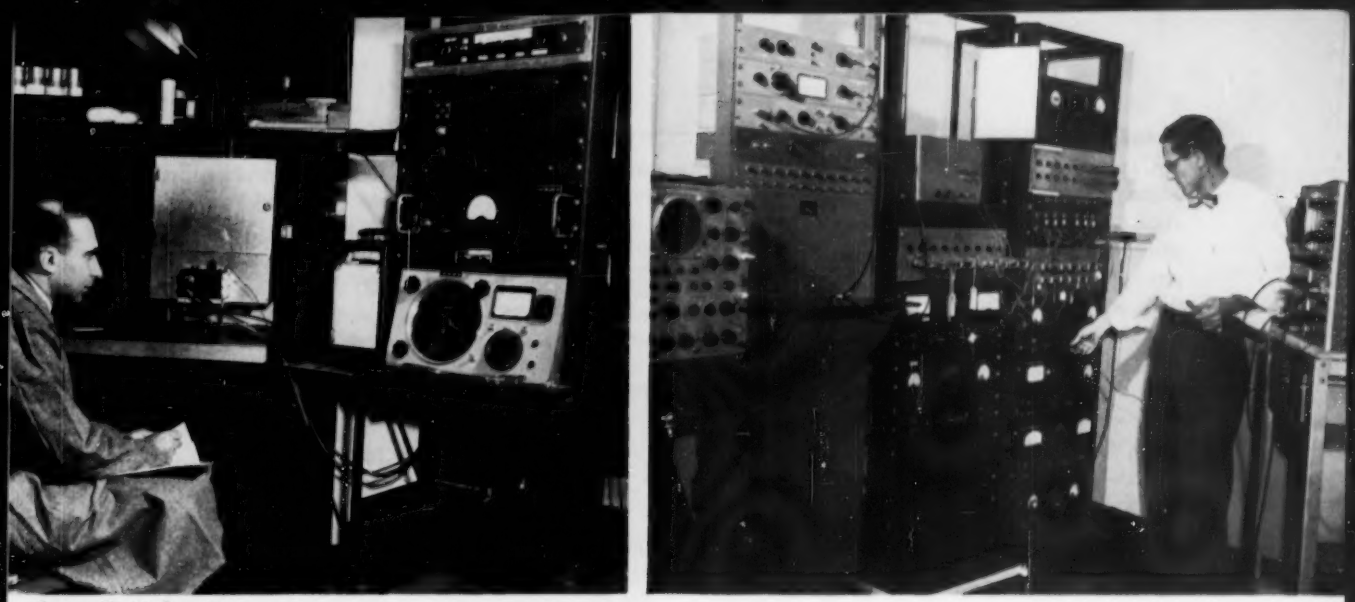
As was the case in London in 1955, there were present in Munich delegates from several Iron Curtain countries. Russia, Poland, Czechoslovakia, Hungary, and Roumania were represented. Russia and Czechoslovakia were particularly interested in the meetings of the TC40 subcommittees. There was no verbal participation by the Czech delegates in any of the meetings, although they did submit written proposals and comments. The Russian delegate to TC 40-5 professed to speak no English, French, or German, but apparently was fully aware of the proceedings conducted entirely in English. When a time came to put numerical proposals regarding testing conditions on the blackboard, he arose at the appropriate moment, without prompting, and put the USSR proposals forward.

Thirty-one nations are members of IEC, and twenty-seven were represented at Munich.

A special vote of thanks from the U.S. National Committee and the U.S. electronics industry is due to the following chairmen of U.S. committees of experts, and to their committees, for the excellent preparatory work and comments they provided the U.S. delegates.

Mr Podolsky, Technical Assistant to the President, Sprague Electric Company, North Adams, Mass., is Technical Advisor to the U.S. National Committee of the International Electrotechnical Commission on the work of IEC Committee TC 40, Electronic Components. He is also chairman of ASA Sectional Committee C83 on Electronic Components, sponsored by the Radio-Electronics-Television Manufacturers Association. Mr Podolsky was chief of the U.S. delegation to the meetings of Technical Committee 40 and its subcommittees held at Munich, Germany, June 25 to July 6. This is his report to the U.S. National Committee. *(See pages 268 and 266 for general reports on the meetings of the International Electrotechnical Commission and the International Organization for Standardization.)*

[1] RETMA is sponsor for Sectional Committee C83, Electronic Components.



Sprague Electric Company

Above, left—Specialized test equipment used to measure the insulation resistance of polystyrene dielectric capacitors. Certain applications in electronic computers, in timing circuits, and in storage circuits and other types of electronic gear require the very special properties found only in these capacitors.
Right—Test equipment used for checking circuits of complex components of electronic computing machines.

Test Methods and Procedures—Conrad Muller, Federal Telecommunication Laboratories

Mica Capacitors—E. D. A. Geoghegan, Micamold Electronics Manufacturing Company

RF Cables and Connectors—Dr J. W. E. Griemmann, Microwave Research Institute

Ceramic Dielectric Capacitors—J. D. Heibel, Eric Resistor Corporation

Carbon Composition Resistors—Jesse Marsten, International Resistance Company

Electrolytic Capacitors—J. W. Maxwell, P. R. Mallory & Company

Crystals—E. L. Minnich, Reeves-Hoffman Corporation

Paper Dielectric Capacitors—J. D. Stacy, General Electric Company

Connectors and Switches—S. M. Del Camp, Cinch Manufacturing Corporation

The following delegates represented the United States at Munich to committees indicated:

Leon Podolsky, Sprague Electric Company; Technical Advisor for USNC; Chief Delegate to TC 40; TC 40-1, Capacitors and Resistors; TC 40-4, Connectors and Switches; TC 40-5 Basic Testing Procedures.

Roger A. Sykes, Bell Telephone Laboratories; Chief Delegate to TC 40-3, Crystals.

A. M. Okun, Bell Aircraft Company; Chief Delegate to TC 40-2, RF Cables and Connectors, and TC 39/40, Sockets for Tubes; Advisory Delegate to TC 40-4, Connectors and Switches.

M. B. Whitehead, Bell Telephone Laboratories; Advisory Delegate to TC 40-1, Capacitors and Resistors; Observer TC 40-3, Crystals.

M. J. Scoville, General Electric Company; Observer TC 40-1.

T. N. Armstrong, International Nickel Company; Special consultant to TC 40-5 on salt spray and corrosion testing.

S. T. Zwerling, Armed Services Electro Standards Agency; Special delegate of U.S. Working Group on Testing, and Advisory Delegate to TC 40-5.

The actions taken by the subcommittees were as follows:

TC 40-5: *Basic Testing Procedures*

The work of this committee is fundamental, not only to the work of all other TC 40 subcommittees, but to all the activities of IEC. The major task at present is the revision of IEC Publication No. 68, Basic Climatic and Material Robustness Testing Procedures. The U.S. has been in strong opposition to several of the requirements of this original document, and has therefore been heavily active in the work toward revision.

Because of the broad importance of its work, this committee is meeting twice a year. The U.S. has had a delegate at each meeting. A special task force has been set up in the U.S., headed by Conrad Muller of Federal Telecommunication Laboratories, to develop the U.S. position and supervise comparative testing to establish test severities. Mr Muller represented the U.S. at the January 1956 meeting in Paris.

A large measure of agreement has been reached on various tests and the secretariat will prepare a draft revision of Publication No. 68 for consideration at the next meeting.

The Working Group has under way, and nearly completed, a seven-nation round robin series of humidity tests on 28 sets of components to establish the relative severities of three different humidity tests. It expects to complete these tests and recommend a standard Long Term Damp Heat Test for incorporation in Publication No. 68 by early next year.

The requirement for a Bumping Test, strongly objected to by U.S. industry because of lack of experience, was limited to an "under consideration" status. The U.S. Task Force, by its study and data presentation, has stimulated action for comparative testing of the effects and severity of bumping and standard U.S. vibration and shock tests. An exchange of calibrated accelerometers has already taken place, and similar exchange of bumping and vibration machines is contemplated.

A recommendation of standard reference temperatures and standard atmosphere for testing was com-

pleted. This will become basic to all IEC practice. Its preparation was mandatory because of the wide variation in climates throughout the world. The U.S.-recommended principle of a referee set of conditions to settle conflicts is included. (Figure 1)

Through courtesy of the International Nickel Company, the U.S. was able to present an expert dissertation, and voluminous research material, by T.N. Armstrong on the subject of salt spray and corrosion testing. As a result of this effective presentation, the general requirement for salt spray testing was removed from specifications for electronic components, and such tests for finishes were removed to "under consideration" status pending study of the U.S. data.

TC 40-4: *Connectors and Switches*

This committee met after its first year of activity.

Based on a proposal prepared by the Swiss National Committee, a general specification for the properties of contacts for connectors and switches was considered in detail. The document was separated as to requirements for connectors and switches, and work was completed on the proposal for connectors. This will be redrafted and circulated to all national committees. The U.S. committee agreed to prepare the data for a specification proposal on switch contacts.

There was complete discussion on a proposal submitted by the U.S. on connectors for printed wiring. This document was revised after discussion and will be circulated to all national committees for consideration as a relevant specification, including test requirements.

This committee was authorized by the plenary meeting of TC 40 to undertake the definition and development of basic parameters for printed wiring. During the Munich meeting consideration was given to a Secretariat proposal on a standard grid and standard diameters for holes. The work will be continued by a special working group, and its proposals circulated for comment.

The committee will undertake the writing of relevant specifications for speaker connectors, connectors used for television antenna twin leads, and other connectors requested by TC 12-2 on radio and television receivers.

1. Standard Ambient Temperature Range for Testing

The Standard Ambient Temperature Range for Testing is the range of ambient temperatures within which tests shall be carried out where no special temperatures for testing are specified and shall be:

+15 to +35°C

Note: This temperature range may be extended to +10° to +40°C by committees dealing with large equipment, etc

2. Standard Reference Temperature

The Standard Reference Temperature is the temperature to which values, measured within the Standard Ambient Temperature Range for Testing, are corrected by calculation and is:

+20°C

3. Standard Ambient Temperatures for Referee Tests

The Standard Ambient Temperature for Referee Tests is the ambient temperature at which measurements are carried out when the parameter being measured is temperature sensitive and the correction factor is unknown. It shall be selected from the following:

20°C ± 2°C
23°C ± 2°C
27°C ± 2°C

4. Standard Atmosphere for Testing

Temperature:	15°-35°C
Relative Humidity:	45%-75%
Air Pressure:	860-1060 mbar (650-800 mm Hg)

5. Standard Atmosphere for Referee Tests

Temperatures:	20°C, 23°C and 27°C
Relative Humidity:	50% ± 2%
Air Pressure:	860-1060 mbar (650-800 mm Hg)

FIGURE 1—*Referee Set of Testing Conditions Recommended by U. S.*

TC 40-3: *Crystals*

In the field of crystals the U.S. has had the unique experience that, following an informal discussion and planning meeting in Philadelphia in 1954, the work of its chief delegate, Roger Sykes, supported by the U.S. Experts Committee, has gained such international admiration and respect that it is considered indispensable to the international committee. The Technical Advisor to TC 40 has had repeated pleas from the chairman of TC 40-3, and other national delegates, to insure the continuity of activity by Mr Sykes and his supporting Experts Committee, and most particularly by Mr Sykes.

A complete generic Specification for Quartz Crystal Units for Oscillators has been completed, including terminology, measuring methods, standard values, etc.[2] This will be circulated, after editing, to all nations for approval as an international standard under the six months trial procedure.

The Committee is working on detailed article specifications for particular crystal types, and specifications for crystal sockets. (This latter work will be coordinated with that of Committee TC 39/40.)

TC 40-2: *RF Cables and RF Connectors*

Because the assigned tasks of this subcommittee have been broadened to include wave guides and fittings, the title of the committee has been changed to "RF Transmission Lines and Their Accessories."

This committee has finalized an international standard on the Characteristic Impedances of RF Cables, which is now published as IEC Document No. 78.

Consideration was given to national comments received on the document "General Requirements

[2] Editor's Note: Mr. Sykes' report comments on this as follows:

"Nearly 100 percent agreement was reached on all matters that had been brought up prior to the committee meeting by correspondence. In those cases where considerable discussion was required the problem was put in the hands of a subcommittee who met nearly every evening, and they were able the next day to resolve the differences.

"The Group Specification now contains nearly 100 percent agreement with the American RETMA, IRE, and the Department of Defense standards.

"Since the Group Specification, which is now essentially agreed to by most nations, contains so much of the American information, it appears possible that it can be duplicated almost completely and used as a RETMA standard for commercial use in this country. In some respects it goes considerably beyond the present RETMA specification, and will be extremely useful for our work in the future for individual data sheets."

and Measurement Methods for RF Cables" 40-2 (Central Office) 2, which was under circulation for six months trial, closing July 14. With the changes made as a result of these comments, including some from the U.S., the document will now be circulated for final approval under a two months rule.

The Secretariat will prepare a new draft of a document covering additional measuring methods, based on comments received from U.S. and other national committees.

A final article specification was concluded on RF cable, 50 ohms impedance, 7.25 mm and this will now be circulated internationally for six months trial.

It was agreed that the subject of wave guides and their fittings could best be dealt with by a small working group of experts, and such a group was nominated, including U.S. representation. Work will go forward at once in this field.

Likewise, it was agreed that the subject of connectors could best be handled by a small working group rather than the large committee. Such a group was nominated, including U.S. membership. This working group will pick up work already in progress and continue the program on connectors.

A priority list of important RF cables for standardization was agreed upon, and the program of future work will concentrate on nine top priority items.

TC 40-1: *Capacitors and Resistors*

This committee had a heavy agenda containing national comments on items already circulated for international approval, new proposals, and consideration of future programs.

(*a*) The specification for Ceramic Capacitors for General Purpose Application, and the general Color Code for Ceramic Capacitors, which had been under six months trial rule, were revised on the basis of national comments received, including many from the U.S. These two documents will now be edited and combined into a single document, and will be circulated internationally for final approval under a two months rule.

(*b*) The specification for General Purpose Aluminum Electrolytic Capacitors was reworked on the basis of comments received under a six months trial, including a definite rejection by the U.S. committee. The U.S. position was accepted, and after editing, the document will go out for final approval under a two months rule.

(*c*) The six months trial, under which the specification for Carbon Resistors for General Purpose Application is being considered, closes July 21. All comments received, including many from the U.S., were discussed and the document will be circulated with these corrections for a two months final approval following the closing date of July 21, 1956.

(*d*) Discussion on the specification for Metallized Mica Dielectric Capacitors was withheld as its six months trial period does not expire until September 23, 1956. Few comments had been received. The U.S. had only a few relatively minor corrections.

(*e*) Comments received on the draft proposal, Carbon Resistors—Close Tolerance, High Stability Type (Type I), including many from the U.S., were discussed and the document was redrafted for circulation under the six months trial procedure.

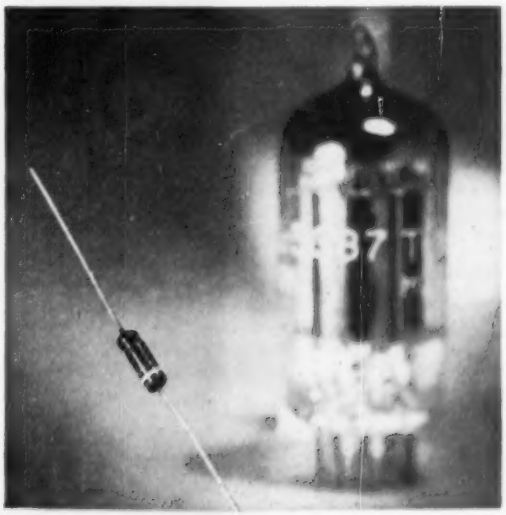
(*f*) Document 40-1 (Secretariat) 11, Shaft Dimensions and Mounting Dimensions, covered shaft, bushing, and mounting dimensions for such items as volume controls, switches, potentiometers, etc. There were very marked differences in the standards proposed by European countries, and those of the U.S. and England, based principally upon differences between standard stock and bar sizes on metric and English dimensions. Acceptance of the metric size standards would have effectively frozen out U.S. products. After unalterable opposition from the U.S. delegation, the entire proposal was withdrawn.

(*g*) The draft proposal for Capacitors for Radio Interference Suppression was completely reworked on the basis of U.S. and other national committee comments, and

(*Continued on following page*)

Ellsworth Seaman, U.S. Bureau of Ships, is chairman of IEC Technical Committee 40, and served as chairman of the committee's meetings at Munich. Committee members comment, "The contributions made by Mr Seaman during the past five years, as chairman of TC 40 and its various subcommittees, have been of inestimable value to the U.S. National Committee and to the fostering of the best interests of U.S. industry and the American Standards Association."

Sperry Rand Corporation



A TRANSISTOR *and a radio tube of the type it may replace.*

Electronic Components

(*Continued from Page 275*)

will be recirculated for further consideration. It was necessary to reconcile an important difference in test voltage requirements between U.S. practice, of 900 volts alternating current for 115-volt applications, and a minimum European safety requirement of 2000 volts ac. This was done successfully.

(*h*) The draft Specification for Metallized Paper Capacitors was completely discussed and reworked, and a new draft will be circulated for comment.

A program for future work, in addition to the indicated actions above, was proposed for development of specifications for carbon potentiometers; wire wound potentiometers; fixed wire wound resistors; dimensions of resistors; and high-reliability metallized paper capacitors.

TC 39/40: Sockets and Accessories for Electronic Tubes and Valves

The scope of this joint subcommittee of the vacuum tube and components technical committees was originally intended to cover tube sockets only. It has now been expanded to include pin straighteners and pin gages for vacuum tubes.

Specification proposals for pin contact resistance measurement were developed. A new draft specification for sockets for tubes was fully discussed and redrafted for circulation to the national committees.

General

1. There was a proposal from the Netherlands National Committee to standardize ferrite-based components. They will propose the subjects to be considered, and a committee of experts will be appointed to consider the area of activity which may be effectively covered by IEC.

2. The work of these components committees is receiving close attention by the committees concerned with apparatus, and wide use of the standards developed seems a certainty. The impact of this on U.S. manufacturers of apparatus and equipment will be important in the very near future.

Standards are

...is the theme of the SEVENTH

American Standards Association in conjunction

to be held at the Roosevelt Hotel,

Highlights of the

PROGRAM

MONDAY, OCTOBER 22

9:30 A.M.: **Thirty-eighth Annual Meeting of the American Standards Association**

Joint Meeting of the ASA Board of Directors and Standards Council, Company Members and Guests

Keynote Address:

Standards Are Everybody's Business

H. Thomas Hallowell, Jr, President, American Standards Association; President, Standard Pressed Steel Co, Jenkintown, Pa.

What Has Been Happening in Your ASA?

Vice Admiral George F. Hussey, Jr, USN (ret), Managing Director, ASA

The Standards Council: Review and Forecast

Arthur S. Johnson, Chairman, Standards Council; Vice-President, American Mutual Liability Insurance Co, Boston, Mass.

Election of Officers

2 P.M.: **Chemical Industry Standards—Management Views and Mutual Benefits**

Sponsored by the Chemical Industry Advisory Board of the ASA on behalf of the chemical industry

Moderator — J. G. Henderson, Chairman, Chemical Industry Advisory Board; Member, Mechanical Technical Committee, Manufacturing Chemists' Association, Inc; Head of Standards, Specifications, and Inspection Services Section, Department of Design and Construction, Carbide and Carbon Chemicals Co, South Charleston, W. Va.

Panel

Mutual Benefits of Standardization, with Emphasis on the Benefits to the Medium-Size Chemical Company

David E. Pierce, Director of Manufacturing Control, Diamond Alkali Co, Cleveland, O.

Standardization as a Basis for the Manufacture of, and Forecasting the Market for, Chemical Process Equipment and Supplies

W. D. Stanley, Vice-President in Charge of Sales, Durron Co

Standardization as Viewed by Management

W. M. Cooper, Assistant General Manager, Research and Engineering Div, Monsanto Chemical Co, St Louis, Mo

2 P.M.: **Dollar Savings Through Standards—Case Histories at the Company Level**

Sponsored by the Standards Engineers Society

Presiding—H. G. Arlt, Vice-President, Standards Engineers Society; Materials Specification Engineer, Bell Telephone Laboratories, Inc, Murray Hill, N. J.

Speakers

Standardization of Company Specifications for Materials, Finishes, and Processes

W. Kummer, Standards Coordinator, Fairchild Camera and Instrument Corporation, Syosset, Long Island, N. Y.

Cost Reductions Possible Through Drafting Practice

Jay H. Bergen, Standards Administrator, American Machine & Foundry Co, Greenwich, Conn.

Standardization of Common Use Parts

R. G. Munroe, Engineering Standards Section Manager, Raytheon Manufacturing Co, Wayland Laboratory, Wayland, Mass.

TUESDAY, OCTOBER 23

9:30 A.M.: **Where Are We in Screw Thread Standardization?**

Sponsored by the ASA Company Member Conference

Presiding—J. Robert Walgren, Chairman, ASA Company Member Conference; Standards Engineer, Aluminum Company of America, Pittsburgh, Pa.

Everybody's Business

NATIONAL CONFERENCE ON STANDARDS, sponsored by the

with its 38th Annual Meeting,

New York, N. Y., Monday-Wednesday, October 22-24, 1956.

Why Screw Thread Standards Must Be Everybody's Business

Frank P. Tisch, Aviation Div, Pheoll Manufacturing Co, Chicago, Ill.

Panel

Irvin H. Fullmer, Chief Engineer, Metrology Section, National Bureau of Standards, Washington, D. C.

Harvey F. Phipard, Continental Screw Co, New Bedford, Mass.

Charles Wright, Standards Engineer, Engineering Div, Chrysler Corp, Detroit, Mich

Slotted and Tapping Screws and Metallic Drive Screws

Harvey F. Phipard, Continental Screw Co, New Bedford, Mass.

Panel

Harvey Erdman, Technical Advisor to the President, National Screw & Manufacturing Co, Cleveland, O.

Louis Oest, Parker Kalon Div, General American Transportation Corp, Clifton, N. J.

Frank P. Tisch, Aviation Div, Pheoll Manufacturing Co, Chicago, Ill.

*

9:30 A.M.: **Standards to Prevent Death and Destruction — Everybody's Business**

Sponsored by the National Fire Protection Association

Presiding—Percy Bugbee, General Manager, National Fire Protection Association, Boston, Mass.

Speakers

Getting Them Out Alive—Blueprints for Air Crash Survival

George H. Tryon, Assistant Technical Secretary, National Fire Protection Association, Boston, Mass.

First Line of Defense Against Fire

T. Seddon Duke, President, Star Sprinkler Corp, Philadelphia, Pa.

Safeguarding Your Life from Fire

Robert S. Moulton, Technical Secretary, National Fire Protection Association, Boston, Mass.

Standards for Fire Fighters

Henry G. Thomas, Chief, Hartford Fire Department, Hartford, Conn.

*

2 P.M.: **Clarification and Inter-Relation of Steel Specifications**

Sponsored by the ASA Company Member Conference

Presiding — J. Robert Walgren, Chairman, ASA Company Member Conference; Standards Engineer, Aluminum Company of America, Pittsburgh, Pa.

Moderator—M. L. Mochel, Manager, Metallurgical Engineering, Westinghouse Electric Corp, Philadelphia, Pa.

Speakers

W. R. Miller, Chief Metallurgical Engineer, American Steel & Wire Div of U. S. Steel Corp, Cleveland, O.

D. H. Ruhnke, Chief Metallurgist, Republic Steel Corp, Massillon, O.

Joseph Gurski, Assistant Manager, Manufacturing Research Dept, Ford Motor Co, Dearborn, Mich.

Company Member Conference Business Meeting

*

2 P.M.: **After the Standard—What Next?**

(A discussion of the obstacles encountered in putting standards into effect)

Sponsored by the Conference of Executives of Organization Members of the ASA (CEOM)

Presiding—F. R. Fetherston, Chairman, CEOM; Secretary-Treasurer, Compressed Gas Association, Inc, New York, N. Y.

Speakers

G. H. Reppert, Code Engineer, National Elevator Manufacturing Industry, Inc, New York, N. Y.

Chester S. Stackpole, Managing Director, American Gas Association, New York, N. Y.

H. W. Heinrich, Chairman, Uniform Boiler and Pressure Vessel Laws Society, Inc., New York, N. Y.

(Mr Heinrich's paper will be presented by John L. Menson, Assistant Chief Engineer, Combustion Engineering, Inc, New York, N. Y.; Member of Executive Council of Uniform Boiler and Pressure Vessel Laws Society.

WEDNESDAY, OCTOBER 24

9:30 A.M.: **Standardization and Atomic Energy**

Sponsored by the Atomic Industrial Forum

Presiding—Vice Admiral W. A. Kitts, III, USN (ret), Chairman, AIF Committee on Standards; Manager, Atomic Products Study, General Electric Company, Schenectady, N. Y.

Speakers

The U.S. Reactor Program—Its Early Origin and the Development of Certain Standard Methods and Criteria

Dr Stuart McLain, Program Coordinator, Argonne National Laboratory, Chicago, Ill.

Standardization Problems of a Reactor Designer—the Need for Standards in Developing a Design for a Reactor or Its Major Components

Harvey Wagner, Mechanical Engineer, The Detroit Edison Company, Detroit, Mich.

Present Nuclear Energy Standardization —A Report on the Work of the ASA Planning Committee on Standardization in the Field of Nuclear Energy

Morehead Patterson, Chairman, ASA Planning Committee; Chairman and President, American Machine and Foundry Company, New York, N. Y.

The Use of Nuclear Techniques in Industrial Testing—Non-destructive Testing, Gaging, Irradiations, etc

Dr Charles Crompton, National Lead Company, Cincinnati, Ohio

*

12 noon: **General Reception and Guests of Honor Reception**

*

12:30 P.M.: **Annual Award Luncheon**

Presiding—H. Thomas Hallowell, Jr, President, American Standards Association

Presentation of The Standards Medal

Presentation of The Howard Coonley Medal

Standards Engineers to Meet in October

"STANDARDS—Guides for Tomorrow" is the theme of the Fifth Annual Meeting of the Standards Engineers Society, October 3-5, at the Hotel Willard, Washington, D. C.

New concepts in building materials; standards in the nuclear energy field, in the chemical industry, and in metals; creative engineering and standards; progress of engine standardization; screw thread standardization; standards in median companies; and management standards are some of the subjects that will be considered with a view to the future.

A new feature will be a series of monetary awards for outstanding performances and service in the field of standardization. Two are sponsored by the American Society for Testing Materials; for the outstanding paper on standardization delivered in the calendar year 1955; and the outstanding service toward furtherance of standardization during the year 1955.

An award for the best technical paper submitted by a member of the Standards Engineers Society is sponsored by the Washington Section, SES.

Presentation of Fellowships to individuals who have made important contributions to standards will be made at the Awards Luncheon.

The Standards Engineers Society now has ten sections in New York; Philadelphia; Hartford, Conn; Washington, D.C.; Binghamton, N. Y.; Pittsburgh, Pa.; Chicago, Ill.; Montreal, Canada; Boston, Mass.; and Los Angeles, Calif. Members are located throughout the United States and Canada, and in Europe.

Standards Engineers Society

Fifth Annual Meeting

Oct. 3, 4, and 5, 1956 Hotel Willard Washington, D. C.

Advance Program

Wednesday, 3 October

10:00 a.m. Registration

1:00 p.m. *New Concepts in Building Materials.* Charles H. Topping, E. I. duPont de Nemours & Company

2:30 p.m. *Decimal Dimensions.* Charles H. Wright, Chrysler Corporation

5:30 p.m. Social Hour

8:00 p.m. *Standardization in the Nuclear Energy Field.* O. J. Gatchell, American Machine and Foundry Company; Dr Henry H. Hausner, manager, Nuclear Engineering Division, Penn-Texas Corporation

Thursday, 4 October

9:30 a.m. *Dynamic Standards for the Median Company.* William Gourlie, William Gourlie Company, *Moderator;* George Gilpatrick, Stanley Works; Russell Carter, Allen Manufacturing Company; John Emmett, Bristol Company

11:00 a.m. *Metals Standardization.* John W. W. Sullivan, American Iron and Steel Institute; D. M. White, Aluminum Association; J. Singleton, Magnesium Association

12:30 p.m. Luncheon Period

2:00 p.m. *ABC Unification.* George Noble, Dominion Engineering Works (Canada); Brigadier R. H. Farrant, British Joint Services Mission (UK); Frank Tisch, Pheoll Manufacturing Company (USA)

3:30 p.m. *Unification of Drafting Practice.* A. F. Gagne, Jr, A. F. Gagne, Jr, Associates, *Moderator*

Panel—

True Position Dimensioning. D. H. Reed, Scintilla Division, Bendix Aviation Corporation

Simplified Drafting. V. S. Ward, International Business Machines Corporation

Drafting Standards and Their Effect on Engineering Service Organizations. W. A. Johnson, Modern Design, Division of H. C. Schloer, Incorporated

5:30 p.m. Social Hour

7:00 p.m. Annual Banquet

Management Standards. E. D. Dwyer, Navy Management Office

Friday, 5 October

9:30 a.m. *Screw Thread Standardization.* H. Thomas Hallowell, Jr, (President, ASA) Standard Pressed Steel Company; Carl Moeller, Pratt and Whitney Company; A. T. McPherson, National Bureau of Standards

12:30 p.m. *Awards Luncheon.* Dr W. R. G. Baker, General Electric Company

2:00 p.m. *Creative Engineering.* (Speakers to be announced)

3:30 p.m. *Anti-Friction Bearing Standardization.* J. Bryant, Link Belt Company; H. H. Gillespie, Navy Bureau of Ships

What Others Say

"Modular Measure is an essential part of the present trend toward industrialization of the U.S. construction industry. Modular Measure encourages economical use of standardized building materials; it does not result in standardization of design. The 4-inch module is small, gives the designer ample freedom. Modular colonial-style houses, modular Gothic churches, modular contemporary schools and hospitals now exist throughout the country."

—*Modular Measure Information Sheet.*

"Although in general the mills themselves are basically good, milling accuracy is poor. The product of the mills was being cut very much oversize. (This condition is not peculiar to British Honduras, by any means. The recent American Standards Association study of performance standards in small mills in the United States showed the same thing was prevalent in every region here, to a greater extent than most of us realize.)"

—*From "Logging and Milling in British Honduras,"* Northeastern Logger, *January*, 1956.

"Oklahoma Natural Gas Company operates several transmission lines which have been in service for periods of 25 years or longer. During the last 10 years when the majority of these old lines were water tested to qualify for high-pressure operations conditions, it was standard practice to establish high operating presures at 80 percent of the applied hydrostatic test pressure. These are now made in accordance with requirements of American Standard B31.1.8-1955."

—*From "How to Water-Test Old Gas Lines"*, Petroleo Inter-Americano, *February*, 1956.

"In this connection it is well to remember that standards not only for equipment but for the gears themselves will be affected by automation. As an example, our own engineers are now in the midst of preparing a new set of standards for rolled splines and serrations. These standards will be presented to the American Gear Manufacturers Association and American Standards Association for their consideration. Their adoption will facilitate forming of the teeth and assure improved physical qualities for the splines."—M. R. Anderson, Executive Vice-President, Michigan Tool Company, at the Diamond Jubilee Meeting, American Society of Mechanical Engineers.

—*From "Commendable Comments"*, Tooling & Production, *January*, 1956.

"Last year manufacturers of gas appliances paid about $1,250,000 in fees to the American Gas Association Laboratories in Cleveland and Los Angeles to cover costs of exhaustive tests given to more than 5,600 individual models of domestic gas appliances during the year.

"Appliances must pass all of these tests and meet American Standards Association requirements to carry the AGA Seal of Approval signifying to the consumer that such appliances are safe, durable, and efficient.

"Nearly 95 percent of the gas appliances sold today carry this Seal of Approval."

—Texas Plumbing Contractor, *November*, 1955.

What Is Your Question?

What is the standard permissible load on eye bolts?

There is no American Standard on eye bolts; however, the Edison Electric Institute has published a document entitled "Suggestions for Specifications for Eye Bolts, TD-4-1939."

Are there American Standards for drafting practice for use specifically by structural engineers?

A section on structural drafting in the proposed American Drafting Standards Manual is being prepared exclusively from the mechanical engineer's viewpoint. The American Institute of Steel Construction has published two volumes on the subject of structural drafting, although these are not American Standards.

Are there standard gage systems for designation of wall thickness of tubes?

Gage systems which have been used for a good many years are now being discouraged. They have caused considerable confusion; for example, the Birmingham or Stubb's Iron Wire Gage is used to designate the wall thickness of seamless steel, copper, brass, and aluminum tubing, whereas the Brown and Sharpe Wire Gage is used for brazed brass and brazed copper tubing. The trend today is toward use of decimals of an inch. Simplified Practice Recommendation R235-48 on Copper and Copper-Alloy Round Seamless Tube lists preferred sizes of tubing for which wall thicknesses are based on the 10-series of Preferred Numbers, in accordance with the American Standard for Preferred Numbers, Z17.1-1936. This Simplified Practice is intended to cover tubing furnished in any one of the four tempers: soft anneal, light anneal, drawn general purpose, and hard drawn. These tempers are defined in ASTM Specifications B75 and B135 for all the alloys included therein.

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering copies of standards, please refer to the number following the title.

621.64 DEVICES FOR CONVEYANCE AND STORAGE OF GASES AND LIQUIDS

Israel (SII)

3 types of copper alloy water cocks SI 169,170,171

Mexico (DGN)

Lead pipes DGN B56-1955
Pressure regulating valve for liquified petroleum gas DGN B82-1956

United Kingdom (BSI)

Vertical mild steel welded storage tanks with butt-welded shells for the petroleum industry: Part 1. Design and fabrication BS 2654:Part 1:1956
Glossary for valves & valve parts (for fluids): Part 2. Safety valves and relief valves BS 2591:Part 2:1956
Part 3. Plug valves and cocks BS 2591:Part 3:1956

621.88 MEANS OF ATTACHMENT. FASTENINGS

Austria (ONA)

Hexagon head screws, unfinished ÖNORM M 5011
Steel rivets ÖNORM M 5301

Canada (CSA)

Binding head machine screws CSA B35-1956

France (AFNOR)

Washers, plain, unfinished NF E 27-611

India (ISI)

Mild steel wire nails IS 723-1956
Mild steel and Brass cup, ruler and square hooks and screw eyes IS 724-1956

Japan (JISC)

Metric coarse thread, limit gages for JIS B 0251
Whitworth coarse thread limit gages for JIS B 0257
3 stds for machine screws JIS B 1113/5
2 stds for square neck bolts, metric & whitworth JIS B 1171/2
Taper pins JIS B 1352

Netherlands (HCNN)

Metric screw threads (S.I.) diameter from 1 to 110 mm N 81

United Kingdom (BSI)

Screwed studs Part 1 General purpose studs BS 2693:1956

621.3 ELECTRICAL ENGINEERING

Germany (DNA)

Round copper rod for busbar DIN 1767
Round aluminum rods for switchgears DIN 1798
Pure aluminum tubes for switchgears DIN 1794
Testing of insulating oil DIN 51554
Elbows for steel conduits DIN 49003
Caps and tongs for ceramic capacitor protecting tube DIN 41111, Bl.1
Top caps for vacuum tubes DIN 41535
Cavity cap for vacuum tubes DIN 41543
4 stds for high-frequency co-axial cables DIN 47265/6, -268/9

India (ISI)

Varnished cambric insulated cables for electricity supply IS 695-1955
PVC cables and cords for electric power and lighting for working voltages up to and including 650 volts to earth IS 694-1955
Specification for Leclanché type dry cells for telecommunication, signalling and general purposes IS 586-1955

Union of South Africa (SABS)

Std specifications for low voltage porcelain insulators SABS161-1955

631 AGRICULTURE. AGRONOMY

India (ISI)

5 stds for construction, protection and improvement of structures for food grain storage IS 600/2-1955
IS 609/10-1955
Code of practice for handling food grain in transit IS 611-1955

Netherlands (HCNN)

Recommended terms used in agricultural engineering. N.1. General V 5101

631.3 AGRICULTURAL TOOLS AND MACHINERY

Germany (DNA)

3 stds for power mower parts DIN 11363/5
Wide rims for agricultural tractor DIN 7823

637.0/.3 DAIRY PRODUCTS. DAIRYING

Netherlands (HCNN)

Butyrometric determination of fat content of homogenized milk and milk prepared with dried not-skimmed milk V 1392

Netherlands (HCNN)

Seamless chromium-nickel steel pipes V 1472
Tinned steel milk churns V 1721

643/645 HOUSEHOLD EQUIPMENT

France (AFNOR)

Pressure cookers NF D 21-351
Domestic gas appliances NF D 32-325
Domestic gas water heaters NF D 35-325
Domestic refrigerators using ice NF D 38-311

Japan (JISC)

3 stds for household chinaware JIS S 3001/3
Wooden kitchenware JIS S 2008

Netherlands (HCNN)

4 stds for school furniture N 1796/7, V 1355/6
4 stds for different types of cupboards, closets, etc. V 2246/9

United Kingdom (BSI)

Electric lifts: Part 3: Outside dimensions BS 2655:Part 3:1955
Safety requirements for catering equipment (steam-heated) BS 2702:1956

661 CHEMICAL PRODUCTS IN THE NARROWER SENSE

France (AFNOR)

Tin sulfate NF T 23-301
Sodium stannate NF T 23-302

India (ISI)

Ammonia, liquor, technical IS 799-55
Ammonium sulphate, technical IS 826-55
Liquid chlorine, technical IS 646-56
Potassium chlorate, technical IS 708-56
Ferric Chloride, Technical IS 711-1955
Carbon disulphide, technical IS 717-1955

665.4/.5 MINERAL OILS, FATS AND WAXES

France (AFNOR)

Closed cup test for flash point of petroleum products NF M 07-011
Determination of flash point of lubricants and fuel oils NF T 60-103
Open cup test for flash point of petroleum products NF T 60-118

666 GLASS AND CERAMIC INDUSTRY

China (CNS)

20 stds for different methods of testing natural and artificial building stones CNS 555/560 (A 16/19, A 20-1/-15, A 21)
16 stds for cement and asbestos-cement tiles CNS 461/476 (R 4/19)

Israel (SII)

4 stds for glass bottles SI 172/5
3 stds for glass jars SI 176/8

Japan (JISC)

Polished plate glass JIS R 3202 *
3 stds for porcelain and pottery articles for export JIS S 3001/3*

668 VARIOUS ORGANIC CHEMICAL INDUSTRIES

India (ISI)

2 stds for coal tar solvent naphtha IS 213/4-56
Specification for transparent toilet soap IS 839-56

Portugal (IGPAI)

4 stds for essential oils NP-57/60
Turpentine. Testing for oxidation residue NP-64

669 METALLURGY

Australia (SAA)

Methods and tables for Brinell hardness testing of metals AS B.81, Part 1-1955

Austria (ONA)

Steel rods for rivets ÖNORM M 3113

Belgium (IBN)

Corrugated galvanized sheets NBN 3

Finland (SFS)

5 stds for round test specimens for tensile test SFS H.I.20/24
Flat tensile test piece SFS H.I.25
Uniform thickness test pieces SFS H.I.27
Tensile test piece for tubes SFS H.I.28
Tensile test piece for strip cut from tube SFS H.I.29

India (ISI)

Zinc base alloy die castings IS 742-1955
Structural steel IS 226-1955

Japan (JISC)

3 stds for rolled steel sections JIS G 3191/3
3 stds for tool steel JIS G 4405/6
3 stds for spectrum analysis of non-ferrous metals JIS H 1011, 1113, 1123
5 stds for nickel plates, rods, wires and tubes used in electronic vacuum tubes JIS H 4501/2, 4511/2, 4522
Aluminum foil JIS H 4191
Ferro-alloys: Rules for chemical analysis, sampling, and inspection JIS G 0305 *
Steel wires: Rules for testing and inspection JIS G 0305 *
Rolled steel for boilers: classification and testing JIS G 3103 *
Steel bars and shapes, cold rolled JIS G 3123 *
Seamless steel pipes for oil well casing and drilling JIS G 3439 *
Steel wire, hard drawn, classification JIS G 3521 *
Iron wires: black, annealed, galvanized, and nailwire JIS G 3532 *
Barbed wires JIS G 3533 *
4 stds for chromium and chromium-molybdenum steels JIS G 4102/5*
Aluminum-chromium-molybdenum steel JIS G 4204 *
Stainless steel JIS G 4301 *

Mexico (DGN)

Red brass sheets, strips and discs, cold rolled DGN B 78-1955
Steel rods for reinforced concrete DGN B 6-1956
Brass strips, cold rolled, for stamping key blanks DGN B 80-1956
Hard bronze trolley wire DGN B 81-1956

Poland

Chemical analysis of bronze PN H-04747
Rolled carbon steel sheets PN H-92120
Tool steel PN H-92330
Cadmium PN H-82202
Test for Molybdenum in Iron and Steel PN H-04019

Union of South Africa (SABS)

Std specifications for foundry pig iron SABS524-1955

United Kingdom (BSI)

Wrought aluminum and aluminum alloys: drawn tube BS 1471:1955
Wrought aluminum and aluminum alloys: forgings and forging stock BS 1472:1955

676 PAPER INDUSTRY

France (AFNOR)

Machinery for making pulp into non-sized sheets for test purposes PM Q 50-002
Sampling paper for testing NF Q 03-002
Support for light-sensitive (heliographic) paper NF Q 15-006

India (ISI)

Envelopes for local authorities IS 2694:1956

Netherlands (HCNN)

Testing of paper for sizing N 930
Test for resistance to passage of air N 1768
Test for wet tensile breaking strength V 2150

United Kingdom (BSI)

Sizing properties of paper: Method of testing the degree of water resistance BS 2644:1955
Method for determining the absorbency of blotting paper-determination of the ink absorbency time BS 2699:1956

678:5 PLASTICS INDUSTRY

Belgium (IBN)

Polyvinyl sheets for raincoats NBN 396

France (AFNOR)

Test for water absorbtion of plastics NF T 51-002

Netherlands (HCNN)

Plastics. Determination of cleaving strength V 1511

Spain (IRATRA)

6 stds for different tests of plastic molding powders UNE 53012/4, 53017/9

683 HARDWARE. IRONMONGERY

China (CNS)

4 stds for drill bushings CNS 388/91 (B204/7)
4 stds for bearing shells CNS 392/5 (B208/11)

France (AFNOR)

Specifications for locks of different cabinets, cupboards, etc NF D 69-301

Hungary (MSZH)

14 stds for different cabinet-maker hardware MNOSZ 14861/75

69 BUILDING INDUSTRY

Netherlands (HCNN)

Magnesium-ozychloride flooring. Specifications N 1396

Union of South Africa (SABS)

Comprehensive model building regulations, chapter 6, Structural steelwork SABS 027-1952

United Kingdom (BSI)

Building sands from natural sources BS 1198, 1199, 1200:1955
Dimensions of processing hangers for sensitized material BS 2753:1956
Steel subframes, sills & window boards for metal windows BS 1422:1956
Coloured mastic asphalt flooring (limestone aggregate) BS 1451:1956
Precast concrete flags BS 368:1956
Concrete interlocking roofing tiles BS 550:1956
'Ready-to-fit' thermal insulating materials hot and cold water supply and central heating installations for small dwellings BS 1304:1956
Glossary of terms applicable to roof coverings PS 2717:1956

691 BUILDING MATERIALS

France (AFNOR)

Hydraulic binders. General NF P 15-350

Germany (DNA)

Cement chimney flue bricks DIN 18150

Israel (SII)

Unreinforced, corrugated asbestos cement sheets IS 459-1955

Netherlands (HCNN)

Bituminous building materials: specifications and tests N 1013
Cement: Mechanical tests V 3072

Portugal (IGPAI)

Tiles and bricks NP-52
Methods of laying down tiles and bricks NP-56

STANDARDIZATION—

(*Continued from Page* 271)

ions of new products are superabundant.

The task for standardization is a compelling one. Its principal parts are: to meet the requirements of our customers; to take maximum advantage of the classical relationship between volume and unit cost; to find ways around the roadblocks of tradition and limitations of resources; and to anticipate and cope with technological change. Taken all together, these challenges demand, of all who perceive the great potentialities of standards, unswerving devotion to two principles: First, co-operative effort for standardization must rise above simple compromise of separate interests. It must seek instead to meld those interests into new common denominators which all parties can share enthusiastically. Second, all standards work must be dynamic, undertaken with full recognition that its ultimate end is to record what is judged best by common consent — but only until the new and better appears. Applying these principles and accomplishing your task is an obligation which must be undertaken for the economic betterment of all mankind; and that is, after all, the only foundation upon which peaceful international relationships can be built.

Gas Cylinder Connections

From "Fire News," July-August, 1956, published by the National Fire Protection Association.

Two accidents involving oxygen and nitrogen cylinders have called attention to a serious hazard which exists where there is a possibility of connecting an oxygen cylinder in place of a nitrogen cylinder.

When nitrogen is used to supply an inert atmosphere for a process possessing a fire or explosion hazard, the accidental substitution of oxygen may create an atmosphere within the equipment consisting of a mixture of flammable gases and pure oxygen which can be detonated with terrific violence.

Unfortunately, the cylinder connections which have been used for many years for oxygen and for oil-free or "water-pumped" nitrogen are identical. American Standard B57.1, developed in 1949 (amended in 1953), provides fittings for these gases which eliminate any possibility of accidental interconnection unless, of course, someone uses an adapter. These standard fittings, however, have not been widely used due principally to the cost of conversion not only by the vendors of the many thousands of cylinders now in use, but also due to consumer resistance where there is corresponding and simultaneous change necessary in connecting parts of consumer-owned utilization equipment. When consumers, however, adopt a vigorous policy in this respect, suppliers will change fittings to the American Standard.

A number of years ago nitrogen generally used by the chemical industry was not chemically pure and contained oil from the compressors as a contaminant. This so-called "oil-pumped" nitrogen is furnished in cylinders having a left-hand thread at the outlet while oxygen is right-handed. Oil-free nitrogen was first demanded by the food industries, which used very little oxygen, and it was felt at the time that little hazard would result if the oxygen connection was used for water-pumped or oil-free nitrogen. However, the chemical industry now uses large amounts of oil-free nitrogen. Although some suppliers have converted to the American Standard, the majority of these producers still use cylinders for oxygen and nitrogen having identical outlet connections.

Color coding of cylinders has not been successful in preventing occasional interconnection as color coding is not standardized and with the many gases handled in cylinders a complete color coding system is difficult to prepare and even more difficult to remember. The name of the gas is applied to the neck of the cylinder but instances have been found where this identification marking is at least partially obscured, in one instance only the last three letters being clear enough to read easily.

The only practical method of making sure that this dangerous cross connection does not occur is by the use of American Standard outlet connections and by avoiding the use of adapters. No user of a compressed gas, however, should rely wholly upon mechanical means for connections to identify the content of the container. All cylinders should be properly marked as recommended by American Standard Z48.1-1942 (as amended 1954) to indicate content, and no unmarked cylinder should be accepted from any supplier.

American Standard Z48.1 has been adopted by reference by the Committee on Gases as a means of identifying cylinder content in NFPA Standard No. 51 as it pertains to the use of Gas Systems for Welding and Cutting, 1956 edition.

NEWS BRIEFS...

• IEC Technical Committee 15, Insulating Materials, and its Subcommittees, held interesting meetings at Munich, June 26-28, that are being reported in a number of publications:

ASTM Bulletin. By Arnold H. Scott, National Bureau of Standards; chairman, Sectional Committee C59 on Insulating Materials; Chairman, IEC/TC 15.

Electrical Manufacturing. By J. F. Dexter, manager, Electrical Section, Product Engineering Laboratories, Dow Corning Corporation.

Insulation. September, 1956. By K. N. Mathes, Insulation Systems, General Engineering Laboratory, General Electric Company.

Delegates to the meetings of many of the other IEC Technical Committees have also prepared reports on the interesting developments at these meetings. Copies can be obtained by writing the American Standards Association.

• Progress was made at the meeting of IEC Technical Committee 15 at Munich toward an "encyclopedia" of insulating materials, reports K. N. Mathes, General Electric Company, one of the delegates. Particularly through the efforts of the Swiss delegation, many examples were provided at the meeting to point the way for further work by all the member nations. The form of the "encyclopedia" will probably be as follows:

I. Outline chart of materials. Classified in accordance with physical form in application.

II. Group charts of materials in similar form. Qualitative relative properties (by shaded circles).

III. Detailed property sheets. Individual materials.

• A paper on the American Standard for Surface Roughness, Waviness, and Lay, B46.1 - 1955, was presented at the semi-annual meeting of the American Society of Mechanical Engineers at Cleveland, Ohio, June 17-21. Prepared by D. V. Kelly, Project Engineer, AC Spark Plug Division, General Motors Corporation, the paper was contributed by the Machine Design Division. Copies (paper No. 56 – SA-48) will be available at 50 cents each from ASME, 29 West 39th Street, New York 18, N. Y. until April 1, 1957.

AMERICAN STANDARDS UNDER WAY

Status as of August 24, 1956

BUILDING AND CONSTRUCTION

American Standard Approved

Billet-Steel Bars for Concrete Reinforcement, ASTM A 15-54T; ASA A50.1-1956 (Revision of ASTM A 15-39; ASA A50.1-1939)

Rail-Steel Bars for Concrete Reinforcement, Specifications for, ASTM A 16-54T; ASA A50.2-1956 (Revision of ASTM A 16-35; ASA A50.2-1936)

Steel for Bridges and Building, Specifications for, ASTM A 7-55T; ASA G24.1-1956

Axle-Steel Bars for Concrete Reinforcement, ASTM A 160-54 T; ASA G43.1-1956

In Standards Board

Fire Tests of Building Construction and Materials, Methods of, ASTM E 119-55; ASA A2.1 (Revision of ASTM E 119-41; ASA A2.1-1942)

Fire Tests of Door Assemblies, Methods of, ASTM E 152-55T; ASA A2.2 (Revision of ASTM E 152-41; ASA A2.2-1942)

Test for Combustible Properties of Treated Wood by the Fire Tube Test Method, Method of, ASTM E 69-50; ASA A 2.3

Test for Combustible Properties of Treated Wood by the Crib Test Method, Method of, ASTM E 160-50; ASA A2.4

Sponsors: American Society for Testing Materials; National Bureau of Standards; National Fire Protection Association

Structural Rivet Steel, Specifications for, ASTM A 141-55; ASA G21.1

Structural Silicon Steel, Specifications for, ASTM A 94-54; ASA G41.1

High-Strength Structural Rivet Steel, Specifications for, ASTM A 195-52 T; ASA G42.1

Axle-Steel Bars for Concrete Reinforcement, Specifications for, ASTM A 160-54T; ASA G43.1

High-Strength Steel Castings for Structural Purposes, Specifications for, ASTM A 148-55; ASA G52.1

Sponsor: American Society for Testing Materials

Standard Submitted

Building Exits Code, A9.1 (Revision of A9.1-1953)

Sponsor: National Fire Protection Association

CONSUMER GOODS

American Standard Approved

Milled Toilet Soap, Specifications for, ASTM D 455-55T; ASA K 60.6-1956 (Revision of ASTM D 455-53T; ASA K60.6-1954)

Sponsor: American Society for Testing Materials

Standard Withdrawn

Code for Testing Domestic Refrigerators Using Ice, ASA B38cl-1931

Sponsor: American Society of Refrigerating Engineers

ELECTRIC AND ELECTRONIC

American Standards Approved

General Service Incandescent Lamps for 115-, 120-, and 125-volt Circuits, C78.-100-1956 (Revision of C78.100-1953)

Miniature Incandescent Lamps, C78.140-1956 (Revision of C78.140-1954)

A-25 Bulb, Medium Screw Base, Incandescent Lamps, ASA C78.252-1956

A-23 Bulb, Medium Screw Base, Incandescent Lamps (Overall Length, maximum 6-5/16 in., minimum 5⅞ in.), ASA C78.253-1956

Sponsor: Electrical Standards Board

In Board of Review

National Electrical Code (Revision of ASA C1-1953)

Sponsor: National Fire Protection Association

In Standards Board

Definitions of Electrical Terms, ASA C42-

Group 20, Switchgear, C42.20-

Group 25, Control Equipment, C42.25-

Group 40, Transportation, C42.40-

Group 41, Transportation—Air, C42.-41-

Group 42, Transportation—Land, C42.-42-

Group 43, Transportation — Marine, C42.43-

Group 50, Electric Welding and Cutting, C42.50-

Group 55, Illuminating Engineering, C42.55-

Group 60, Electrochemistry and Electrometallurgy, C42.60-

Group 70, Electron Devices, C42.70-

Group 85, Mining, C42.85-

Sponsor: Electrical Standards Board

Electron Tube Bases, Caps, and Terminals, ASA C60.1- (Revision of RETMA ET-103-B; NEMA 500-B; ASA C60.1-1952)

Dimensional Characteristics of Electron Tubes, ASA C60.2- (Revision of RETMA ET-105-A; NEMA 502-B; ASA C60.2-1953)

Gauges for Electron Tube Bases, ASA C60.7- (Revision of RETMA ET-106-A; NEMA 503-A; ASA C60.7-1952)

Definitions of Semiconductor Terms, IRE 7.S2; ASA C60.14

Sponsor: Joint Electron Tube Engineering Council

Dimensional and Electrical Characteristics of 40-Watt T-12 Pre-heat Start Fluorescent Lamp, ASA C78.408- (Revision of ASA C78.408-1951)

Dimensional and Electrical Characteristics of 72-Inch T-12 Rapid Start (Mogul Bipin) Fluorescent Lamp, C78.701-

Sponsor: Electrical Standards Board

Fluorescent Lamp Reference Ballasts, Specification for, ASA C82.3- (Revision of ASA C82.3-35)

Sponsor: Electrical Standards Board

GAS BURNING APPLIANCES

American Standards Approved

Hotel and Restaurant Gas Ranges and Unit Broilers, Approval Requirements for, Z21.3-1956 (Revision of Z21.3-1940 and Addenda Z21.3a-1946)

Domestic Gas Clothes Dryers, Approval Requirements for, Z21.5-1956 (Revision of Z21.5-1953, and Addenda Z21.5a-1954)

Gas Water Heaters, Approval Requirements for, ASA Z21.10-1956 (Revision of Z21.10-1953, and Addenda Z21.10a-1954 and Z21.10b-1955)

Gas-Fired Room Heaters, Approval Requirements for, Z21.11-1956 (Revision of ASA Z21.11-1954 and Addenda Z21.11a-1955)

Gas Water Heaters, Volume II, Side-Arm Type Water Heaters Designed for Use with Auxiliary Storage Systems, Approval Requirements for, ASA Z21.10.2-1956

Central Heating Gas Appliances, Volume I, Steam and Hot Water Boilers, Approval Requirements for, Z21.13.1-1956 (Revision of Z21.13.1-1951 and Addenda Z21.1-13.1a-1954 and Z21.13 1b-1955).

Central Heating Gas Appliances, Volume II, Gravity and Forced-Air Central Furnaces, Approval Requirements for, Z21.13.2-1956 (Revision of ASA Z21.-13.2-1955)

Central Heating Gas Appliances, Volume III, Gravity and Fan Type Floor Furnaces, Approval Requirements for, Z21.13.3-1956 (Revision of ASA Z21.-13.3-1951 and Addenda Z21.13.3a-1954 and Z21.13.3b-1955)

Central Heating Gas Appliances, Volume IV, Gravity and Fan Type Vented Recessed Heaters, Addenda Z21.13.4a-1956) Approval Requirement Z21.13.4-1955

Gas Unit Heaters, Approval Requirements for, Z21.16-1956 (Revision of ASA Z21.16-1951, and Addenda Z21.16a-1953 and Z21. 16b-1955)

Domestic Gas Appliance Pressure Regulators, Listing Requirements for, Z21.-18-1956 (Revision of ASA Z21.18-1955)

Metal Connectors for Gas Appliances, Addenda (Z21.24a-1956) to Listing Requirements Z21.24-1955

Hotel and Restaurant Deep Fat Fryers, Addenda (Z21.27a-1956) to Approval Requirements ASA Z21.27-1955

Portable Gas Baking and Roasting Ovens, Approval Requirements for, Z21.28-1956 (Revision of ASA Z21.28-1948, and Addenda Z21.28a-1954)

Gas Counter Appliances, Approval Requirements for, Z21.31-1956 (Revision of ASA Z21.31-1941, and Addenda Z21.31a-1954)

Gas-Fired Duct Furnaces, Addenda (Z21.34a-1956) to ASA Z21.34-1955

Sponsor: American Gas Association

Reaffirmation Approved

Automatic Pilots, Listing Requirements for, Z21.20-1951 R 1956

Installation of Gas Equipment in Large Boilers, Requirements for, ASA Z21.33-1950 R 1956

MATERIALS AND TESTING

American Standards Published

Inorganic Aggregates for Use in Interior Plaster, ASTM C 35-54T; ASA A107.1-1956 (Revision of ASTM C 35-53T; ASA A107.1-1954 $0.30

Requirements covering those aggregates most commonly used in interior plaster, which include perlite, sand (natural and manufactured), and vermiculite. Other aggregates may be employed, provided tests have demonstrated them to yield plaster of satisfactory quality.

Sample Preparation for Physical Testing of Rubber Products, ASTM D 15-55T; ASA J1.1-1956 (Revision of ASTM D 15-54T; ASA J1.1-1955) $0.30

Sponsor: American Society for Testing Materials

American Standards Approved

Zinc (Hot-Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars, and Strips, Specifications for, ASTM A 123-53; ASA G8.1-1956

Structural Rivet Steel, ASTM A 141-55; ASA G21.1-1956

Boiler Rivet Steel and Rivets, ASTM A 31-55; ASA G28.1-1956

Structural Steel for Locomotives and Cars, ASTM A 113-54; ASA G39.1-1956

Structural Silicon Steel, ASTM A 94-54; ASA G41.1-1956

High-Strength Structural Rivet Steel, ASTM A195-52 T; ASA G42.1-1956

Electrodeposited Coatings of Zinc on Steel, Specifications for, ASTM A 164-55; ASA G53.1-1956

Electrodeposited Coatings of Cadmium on Steel, Specifications for, ASTM A 165-55; ASA G53.2-1956

Electrodeposited Coatings of Nickel and Chromium on Steel, Specifications for, ASTM A 166-55T; ASA G53.3-1956

Electrodeposited Coatings of Nickel and Chromium on Copper and Copper-Base Alloys, Specifications for, ASTM B 141-55; ASA G53.4-1956

Electrodeposited Coatings of Nickel and Chromium on Zinc and Zinc-Base Alloys, Specifications for, ASTM B 142-55; ASA G53.5-1956

Chromium Plating on Steel for Engineering Use, Recommended Practice for, ASTM B 177-55; ASA G53.6-1956

Preparation of Low-Carbon Steel for Electroplating, Recommended Practice for, ASTM B 183-49; ASA G53.7-1956

Electrodeposited Coatings of Lead on Steel, Specifications for, ASTM B 200-55T; ASA G53.8-1956

Chromate Finishes on Electrodeposited Zinc, Hot-Dipped Galvanized, and Zinc Die-Cast Surfaces, Specifications for, ASTM B 201-55T; ASA G53.9-1956

Preparation of High-Carbon Steel for Electroplating, Recommended Practice for, ASTM B 242-54; ASA G53.10-1956

Preparation of Zinc-Base Die Castings for Electroplating, Recommended Practice for, ASTM B 252-53; ASA G53.11-1956

Preparation of and Electroplating on Aluminum Alloys, Recommended Practice for, ASTM B 253-53; ASA G53.12-1956

Preparation of and Electroplating on Stainless Steel, Recommended Practice for, ASTM B 254-53; ASA G53.13-1956

Preparation of Copper and Copper-Base Alloys for Electroplating, Recommended Practice for, ASTM B 281-53T; ASA G53.14-1956

Method of Test for Calorific Value of Gaseous Fuels by the Water-Flow Calorimeter, ASTM D 900-55; ASA Z68.1-1956

Sponsor: American Society for Testing Materials

Standards Withdrawn

Zinc-Coated Iron or Steel Chain-Link Fence Fabric Galvanized After Weaving, Specifications for, ASTM A 117-33; ASA G8.5-1935

Carbon-Steel and Alloy-Steel Blooms, Billets and Slabs for Forgings, Specifications for, ASTM A 17-29; ASA G9.1-1933

Refined Iron Bars, Specifications for, ASTM A 41-36; ASA G12-1936

Alloy-Steel Bolting Material for High-Temperature Service, Specifications for, ASTM A 96-44; ASA G17.2-1944

Mild Steel Plates, Specifications for, ASTM A 10-39; ASA G20-1939

Carbon-Steel Castings Suitable for Fusion Welding for Miscellaneous, Industrial Uses, Specifications for, ASTM A 215-44; ASA G51.1-1944

Chemical Analysis of Alloys of Lead, Tin, Antimony, and Copper, Methods of, ASTM B 18-36T; ASA K5-1922

Battery Assay of Copper, Method of, ASTM B 34-36T; ASA K12-1921

Sampling Coal for Analysis, Method of, ASTM D 21-40; ASA K46-1940

Sponsor: American Society for Testing Materials

MECHANICAL

American Standards Approved

Life Tests for Single-Point Tools of Sintered Carbide, B5.34-1956

General description of tool wear, preparation of tools for tests, and tests to determine relationship between tool wear and cutting time for single point tools of sintered carbide. Tests for single point tools made of materials other than sintered carbides are covered in B5.19

Sponsors: American Society of Mechanical Engineers; American Society of Tool Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers

Zinc-Coated (Galvanized) Iron or Steel Sheets, Coils and Cut Lengths, Specifications for, ASTM A 93 - 55 T; ASA G8.2-1956

Lightweight and Thin-Sectioned Gray Iron Castings, Specifications for, ASTM A 190-47; ASA G27.1-1956 (Revision of ASTM A 190-40; ASA G27.1-1942)

Boiler Rivet Steel and Rivets, Specifications for, ASTM A 31-55; ASA G28.1-1956

Carbon-Silicon Steel Plates of Intermediate Tensile Ranges for Fusion-Welded Boilers and Other Pressure Vessels, Specifications for, ASTM A 201-54T; ASA G31.1-1956

Chromium-Manganese-Silicon (CMS) Alloy-Steel Plates for Boilers and Other Pressure Vessels, Specifications for, ASTM A 202-54T; ASA G32.1-1956

Nickel-Steel Plates for Boilers and Other Pressure Vessels, Specifications for, ASTM A 203-54T; ASA G33.1-1956

Molybdenum-Steel Plates for Boilers and Other Pressure Vessels, Specifications for, ASTM A 204-54T; ASA G34.1-1956

High-Tensile Strength Carbon-Silicon Steel Plates for Boilers and Other Pressure Vessels, Specifications for, ASTM A 212-52aT; ASA G35.1-1956

Carbon and Alloy Steel Nuts and Bolts for High-Pressure and High-Temperature Service, Specifications for, ASTM A 194-55T; ASA G38.1-1956

Mild-to Medium-Strength Carbon-Steel Castings for General Application, ASTM A 27-55; ASA G50.1-1956

High-Strength Steel Castings for Structural Purposes, ASTM A 148-55; ASA G52.1-1956

Sponsor: American Society for Testing Materials

In Standards Board

Conveyor Terms and Definitions, B75

Sponsor: Conveyor Equipment Manufacturers Association

American Standards Withdrawn

Carbon-Steel Plates for Stationary Boilers and Other Pressure Vessels, ASTM A 70-44; ASA G29.1-1945

Low Tensile Strength Carbon-Steel Plates of Flange and Firebox Qualities, ASTM A 89-43; ASA G30.1-1943

Alloy-Steel Castings for Valves, Flanges and Fittings for High-Temperature Service, ASTM A 157-44; ASA G36.1-1944

Low Tensile Strength Carbon-Steel Plates of Structural Quality for Welding, ASTM A 78-43; ASA G40.1-1943

Withdrawal Being Considered

Carbon-Steel Castings Suitable for Fusion Welding for Miscellaneous Industrial Uses, ASTM A 215-44; ASA G51.1-1944

Sponsor: American Society for Testing Materials

MINING

American Standard Withdrawn

Sampling Coal for Analysis, Method of, ASTM D 21-40; ASA K46-1940

Sponsor: American Society for Testing Materials

PAINTS AND VARNISHES

American Standards Approved

Chemical Analysis of White Pigments, Methods of, ASTM D 34-51T; ASA K15.1-1956

Titanium Dioxide Pigments, Specifications for, ASTM D 476-48; ASA K45.1-1956

Standard Withdrawn

Test for Alkalinity or Acidity of Pigments, Method of, ASTM D 278-31; ASA K-51-1941

Sponsor: American Society for Testing Materials

PHOTOGRAPHY

American Standard Published

Definition of a Fine Grain Developer, ASA PH4.14-1956 $0.50

Sponsor: Photographic Standards Board

Provides a method for evaluating the performance of a developer in comparison with the reference developer with respect to graininess pattern. It applies to black-and-white continuous-tone still photography where the result is normally viewed as a reflection print.

In Standards Board

Dimensions for 35mm Motion-Picture Negative Raw Stock, PH 22.34 (Revision of Z22.34-1949)

Dimensions for 35mm Motion-Picture Film, Alternate Standard for Positive Raw Stock, PH22.102

Sponsors: Society of Motion Picture and Television Engineers

PIPE AND FITTINGS

American Standards Approved

Welded and Seamless Steel Pipe, Specifications for (Revision of ASTM A 53-47; ASA B36.1-1950) ASTM A 53-55T; ASA B36.1-1956

Welded Wrought-Iron Pipe, Specifications for (Revision of ASTM A 72-45; ASA B36.2-1950) ASTM A 72-55; ASA B36.2-1956

Seamless Carbon-Steel Pipe for High-Temperature Service, Specifications for (Revision of ASTM A 106-48T; ASA B36.3-1950) ASTM A 106-55T; ASA B36.3-1956

Electric-Fusion (Arc)-Welded Steel Plate Pipe, Sizes 16 in. and Over, Specifications for, ASTM A 134-54; ASA B36.4-1956 (Revision of Electric-Fusion-Welded Steel Pipe, Sizes 30 in. and Over, ASTM A 134-42; ASA B36.4-1942)

Electric-Resistance-Welded Steel Pipe, Specifications for, ASTM A 135-55T; ASA B36.5-1956 (Revision of ASTM A 135-46; ASA B36.5-1950)

Electric-Fusion (Arc)-Welded Steel Pipe, Sizes 4 in. and Over (Revision of Electric-Fusion-Welded Steel Pipe, Sizes 4 in. to but not including 30 in, ASTM A 139-46; ASA B26.9 1950) ASTM A 139-55; ASA B36.9-1956

Electric-Fusion-Welded Steel Pipe for High-Temperature Service (Revision of Electric-Fusion-Welded Steel Pipe for High-Temperature and High-Pressure Service, ASTM A 155-42; ASA B36.11-1942) ASTM A 155-55T; ASA B36.11-1956

Seamless Steel Boiler Tubes, Specifications for (Revision of Lap-Welded and Seamless Steel and Lap-Welded Iron Boiler Tubes, ASTM A 83-44; ASA B36.12-1945, ASTM A 83-55T; ASA B36.12-1956

Electric-Resistance-Welded Steel and Open-Hearth Iron Boiler Tubes, Specifications for (Revision of ASTM A 178-44; ASA B36.13-1945) ASTM A 178-55T; ASA B36.13-1956

Seamless Steel Boiler Tubes for High-Pressure Service, Specifications for (Revision of ASTM A192-44; ASA 36-14-1945) ASTM A 192-55 T; ASA B36.14-1956

Medium-Carbon Seamless Steel Boiler and Superheater Tubes, Specifications for (Revision of ASTM A210-44; ASA B36.15-1945) ASTM A 210-55T; ASA B36.15-1956

Spiral-Welded Steel or Iron Pipe, Specifications for (Revision of ASTM A 211-44; ASA B36.16-1945) ASTM A 211-54; ASA B36.16-1956

Seamless Alloy-Steel Boiler, Superheater and Heat Exchanger Tubes, Specifications for (Revision of Seamless Alloy-Steel Boiler and Superheater Tubes, ASTM A 213-44; ASA B36.17-1945) ASTM A 213-55 T; ASA B36.17-1956

Electric-Resistance-Welded Steel Boiler and Superheater Tubes for High-Pressure Service, Specifications for (Revision of ASTM A 226-44; ASA B36.18-1945) ASTM A 226-55T; ASA B36.18-1956

Welded and Seamless Open-Hearth Iron Pipe, Specifications for (Revision of Welded-Alloyed Open-Hearth Iron Pipe, ASTM A 253-47; ASA B36.23-1950) ASTM A 253-55T; ASA B36.23-1956

Seamless and Welded Austenitic Stainless Steel Pipe, Specifications for (Revision of ASTM A 312-48T; ASA B36.26-1950), ASTM A 312-55T; ASA B36.26-1956

Seamless Low-Carbon and Carbon-Molybdenum Steel Still Tubes for Refinery Service, Specifications for, ASTM A 161-55T; ASA B36.27-1956

These specifications cover seamless, hot-rolled and cold-drawn, low-carbon and carbon-molybdenum steel still tubes, 2 in. and over, in oustide diameter and thicker than 0.220 in. in minimum wall for use in carrying oil at elevated temperatures and pressures. Lists chemical requirements and tensile properties and describes various tests.

Seamless Cold-Drawn Low-Carbon Steel Heat-Exchanger and Condenser Tubes, Specifications for, ASTM A 179-55T; ASA B36.28-1956

These specifications cover seamless cold-drawn low-carbon steel tubes for tubular heat exchangers and condensers, describing the various tests on which acceptance is to be based, listing chemical requirements and describing the methods of analysis.

Seamless Cold-Drawn Intermediate Alloy-Steel Heat-Exchanger and Condenser Tubes, Specifications for, ASTM A 199-55T; ASA B36.29-1956

These specifications cover several grades of chromium-molybdenum and chromium-molybdenum-silicon intermediate alloy-steel tubes, in sizes ½ in. to but not including 2 in. in outside diameter. They give process and method of manufacture, list chemical composition, give method of check analysis, and describe various tests on which acceptance is based.

Seamless Intermediate Alloy-Steel Still Tubes for Refinery Service, Specifications for, ASTM A200-55T; ASA B36.30-1956

These specifications cover several grades of chromium-molybdenum and chromium-molybdenum-silicon seamless, hot-rolled and cold-drawn intermediate alloy-steel still tubes, 2 in. and over in outside diameter and thicker than 0.220 in. in minimum wall for use in carrying oil at elevated temperatures and pressures. Lists chemical requirements and tensile properties and describes various tests.

Seamless Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes, Specifications for, ASTM A 209-55T; ASA B36.31-1956

These specifications cover three grades of seamless carbon-molybdenum alloy-steel tubes. Contain a table giving diameters and wall thicknesses, list chemical requirements, describe check analysis, and various tests on which acceptance is based.

Electric-Resistance-Welded Steel Heat-Exchanger and Condenser Tubes, Specifications for, ASTM A 214-55 T; ASA B36.32-1956

Welded Austenitic Stainless Steel Boiler, Superheater, Heat Exchanger and Condenser Tubes, Specifications for, ASTM A 249-55T; ASA B36.33-1956

Electric-Resistance-Welded Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes, Specifications for, ASTM A 250-55T; ASA B36.34-1956

Copper Brazed Steel Tubing, Specifications for, ASTM A 254-55T; ASA B36.35-1956

Seamless and Welded Ferritic Stainless Steel Tubing for General Service, Specifications for, ASTM A 268-55; ASA B36.36-1956

Seamless and Welded Austenitic Stainless Steel Tubing for General Service, Specifications for, ASTM A 269-55; ASA B36.37-1956

Seamless and Welded Austenitic Stainless Steel Sanitary Tubing, Specifications for, ASTM A 270-55; ASA B36.38-1956

Seamless Austenitic Chromium-Nickel Steel Still Tubes for Refinery Service, Specifications for, ASTM A 271-55; ASA B36.39-1956

Seamless and Welded Steel Pipe for Low-Temperature Service, Specifications for, ASTM A 333-55T; ASA B36.40-1956

Seamless and Welded Steel Tubes for Low-Temperature Service, Specifications for, ASTM A 334-55T; ASA B36.41-1956

Seamless Ferritic Alloy Steel Pipe for High-Temperature Service, ASTM A 335-55T; ASA B36.42-1956

[Combined revision of the following standards:

Seamless Alloy-Steel Pipe for High-Temperature Service (ASTM A158-49T) B36.21-1950; Seamless Carbon-Molybdenum Alloy-Steel Pipe for High-Temperature Service (ASTM A206-48T) B36.22-1950; Seamless Chromium-Molybdenum Alloy-Steel Pipe for Service at High Temperature (ASTM A280-48T) B36.24-1950; Seamless 1 Percent Chromium, 0.5 Percent Molybdenum Alloy-Steel Pipe for Service at High Temperatures (ASTM A315-48T) B36.25-1950]

Sponsors: American Society of Mechanical Engineers; American Society for Testing Materials

Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service, Specifications for, ASTM A 182-55T; ASA G37.1-1956

Forged or Rolled Steel Pipe Flanges, Forged Fittings, and Valves and Parts for General Service, Specifications for, ASTM A 181-55T; ASA G46.1-1956

Sponsor: American Society for Testing Materials

Standard Submitted

Bituminized-Fibre Drain and Sewer Pipe, Commercial Standard CS 116-54

Submitted by: Commodity Standards Division, U.S. Department of Commerce

SAFETY

American Standard Approved

Textile Safety Code, ASA L1.1-1956 (Revision of ASA L1.1-1947

Sponsor: National Safety Council

Opportunities for engineers capable of establishing standards—

that are news, not just history

that are vital to Development Engineering Projects

that are available to Design Engineers when they need them

IBM wants qualified engineers for a dynamic program to co-ordinate a standardization effort in commercial business and data processing machine development programs. If you possess the qualifications outlined below, there is a challenge to be met in providing standards in the following fields: Computer Circuitry • Electronic Components • Magnetic Devices • Semi-Conductors • Electronic Packaging • Statistical Dimensioning • Manufacturing Process • Materials • Mechanical Components • Automation

Requirements: Engineering degree or equivalent experience. Ability to understand the work of design and development engineers; to establish the need for standards; to gather information and to present technical material clearly and concisely.

- Excellent salaries—advancement on merit
- Company-paid life insurance, retirement and hospitalization plans
- Family educational and recreational facilities.

If interested, write, outlining the details of your background and interests, to:

William M. Hoyt, Room 6409
INTERNATIONAL BUSINESS MACHINES CORPORATION
590 Madison Avenue, New York 22, N.Y.

What's New On American Standard Projects

Power Switchgear, C37—

Sponsor: Electrical Standard Board

V.L. Cox, General Electric Company, chairman of Sectional Committee C37, announces organization of three new subcommittees.

Automatic Circuit Reclosers and Line Sectionalizers. A. Van Ryan, Line Material Company, chairman. The Standards Committee of the American Institute of Electrical Engineers has recommended that a revision of AIEE Standard No. 50, Automatic Circuit Reclosers and Automatic Line Sectionalizers for A-C Distribution Systems, be adopted as American Standard. This revision was completed last year by the Automatic Reclosers and Line Sectionalizers Subcommittee of the AIEE Committee on Switchgear. The new subcommittee of Sectional Committee C37 has been appointed to review this document and supplement it with a schedule of preferred ratings in preparation for submitting a proposal to the full membership of Sectional Committee C37. Members of the subcommittee, in addition to the chairman, are: H. Brooks, Westinghouse Electric Corporation; L.B. Crann, Rural Electrification Administration; F.W. Edwards, Duke Power Company; E.J. Field, R & IE Division, ITE Circuit Breaker Company; J.R. Guy, Cleveland Electric Illuminating Company; J.B. Hendrix, Wisconsin Electric Power Company; W.C. Mitchell, General Electric Company.

Protective Relays. F. Von Roeschlaub, Ebasco Services, Inc, chairman. This subcommittee has been prepared primarily to consider a proposal for international work on protective relays issued by the Technical Committee on Protective Relays of the International Electrotechnical Commission. V.L. Cox, chairman of Sectional Committee C37, is the Technical Advisor to the U.S. National Committee of the IEC, on switchgear. Mr Cox has appointed the new C37 subcommittee on Protective Relays to advise him on the IEC proposals. The subcommittee will also consider proposals that come before ASA in the future with respect to protective relaying.

Members of the subcommittee are: J.R. Linders, Cleveland Electric Illuminating Company; M.S. Merritt, Tennessee Valley Authority; W.K. Sonnenman, Westinghouse Electric Corporation; R.E. Cordray, General Electric Company.

Coupling Capacitors, Coupling Capacitor Potential Devices, and Line Traps. The National Electrical Manufacturers Association has requested ASA approval of NEMA Standard SG11-1955. This being a somewhat specialized field with which the majority of members of Sectional Committee C37 are unfamiliar, a Task Group of experts in the field has been appointed to review the matter and make recommendations to the sectional committee. L.F. Kennedy, General Electric Company, is chairman. Other members are: R.E. Marbury, Westinghouse Electric Corporation; L.G. Eaton, New England Power Service Company; G.E. Farmer, Tennessee Valley Authority; L.G. Evans, Public Service Company of New Hampshire.

ISO Technical Committee 27, Solid Mineral Fuels—

Dr O. W. Rees, Chemist and Head, Analytical Division, Illinois State Geological Survey, Urbana, Illinois, has been named chairman of Committee D-5 on Coal and Coke of the American Society for Testing Materials. The committee acts as the American Group for ISO Technical Committee 27. Dr Rees succeeds W. W. Anderson, Commercial Testing and Engineering Company, Chicago. C. C. Russell, Koppers Company, Inc, Research Depart-

ment, is secretary of the committee. He succeeds O. P. Brysch, Institute of Gas Technology, Chicago.

Textiles, L22—

Sponsor: National Retail Dry Goods Association

The work on American Standards for rayon and acetate, L22, is being merged with the project on all textiles, L25, and the complete project is being designated "L22."

The National Retail Dry Goods Association, sponsors for both L22 and L25, made the merger proposal to ASA's Consumer Goods Standards Board. The CGSB voted to carry out the merger immediately.

J. Gordon Dakins, executive vice president of NRDGA, gave these reasons for requesting the action: "Since there is much of the same organization membership on both committees, and since the L22 standards have become well known in the trade, there is overlapping of work and confusion between the two projects. We request amalgamation to simplify the procedures, insure uniformity of requirements, and make possible more effective educational activities than would be the case if the work were divided."

The new scope for the combined projects covers: "Specifications, methods of test, and performance requirements for fabrics in terms of their end-use, regardless of fiber content, for men's wear, women's wear, and home furnishings; development of suitable procedures for promoting the use of any standards developed under this project by means of labels, tags, or other effective methods."

Anesthetic Equipment, Z79—

The American Society of Anesthesiologists has been invited to serve as sponsor for the new project on standards for anesthetic equipment. A sectional committee will be organized to develop standards under a scope defined as: "Terminology, definitions, identification, dimensions, and tolerances, specifications, and methods of test of items and materials for endotracheal tubes."

Standards Outlook

by Leo B. Moore

Standards Enforcement

The great plague of most company standards programs is failure of the functions to employ authorized standards. Even the term — authorized — suggests that non-use is anticipated, although many heads and many hours may have been utilized in the consideration, deliberation, and preparation of the standard. The attitude is generally taken that company standards are voluntary.

This voluntary notion has caused standards engineers to engage in many practices designed to encourage use of standards. Some standards groups pursue the idea of collaboration to the point of exhaustion on the faint assumption that all who join in the preparation or review of a standard will use it. Others operate on the basis that the publication and distribution of standards in properly identified manuals will serve the purpose. Still others, more realistically, employ extensive consultation with potential users to urge the employment of the standard.

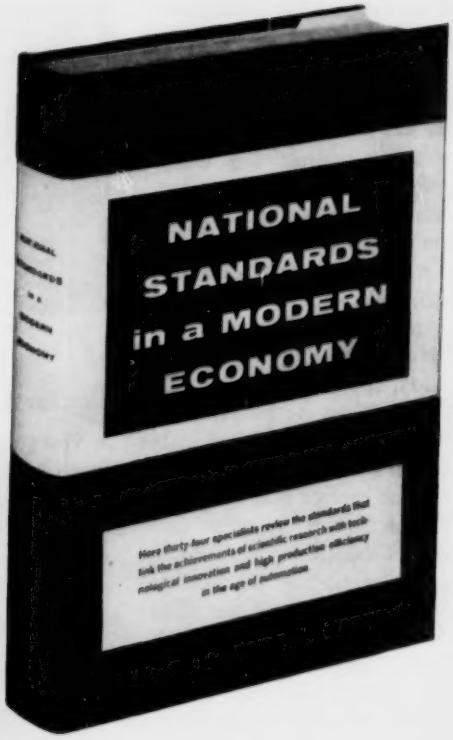
In other instances, more positive steps have been taken in the matter of enforcement. To assure use, standards people have sought organizational assignment of the responsibility to enforce standards. This responsibility, for example, may be placed with the purchasing department which is expected to identify all purchases for nonstandard items. Going back further, the responsibility may be with the engineers who are expected to check for use of standards before release of an item to production. Going back even further, the responsibility may be with the drafting department which is expected to check all prints in the process of their preparation. Wherever these techniques have been used, however, there is always present the right to seek and obtain permission to use nonstandard items according to the needs of the moment.

Certainly the logic of this situation may not be readily apparent. On the one hand, time and effort is taken to prepare a decision; on the other hand, time and effort is taken to plead the use of the decision. The common sense of the whole endeavor may well be questioned by any observer, and particularly by any person in management who wonders about such matters. Perhaps it would not be amiss to say that many management people may find it difficult to understand and to support such actions.

Note that these points are raised strictly on the company level. The work of association and society groups in standards matters should not be concerned with enforcement. These groups represent a variety of company situations and conditions and, therefore, must give more general treatment to the subject matter. In effect, American Standards, and association and society standards, constitute recommendations in the eyes of the companies, who face a specific situation and condition, and who must make their own decisions within the framework of these recommendations. Therefore, should compliance with specific company decisions be voluntary?

Now Available...

A Comprehensive Study of the Role of Standards in Past and Present Economic Development . . . . . .



NATIONAL STANDARDS in a MODERN ECONOMY

Edited by DICKSON RECK
Late Professor, School of Business Administration, University of California

"The partnership between science and standards holds the secret to the extraordinary dynamism and productivity of modern industrial technology. This partnership begins at the laboratory door; it comes to rest only when the goods are used up in the hands of the ultimate consumer."

So states the preface to this definitive book, which is both a review of the evolution of standards and an evaluation of their crucial place in the world today. Many of the contributors to this volume are themselves leaders in the private and public organizations that have developed modern standards in a series of major cooperative efforts. From positions of authority the writers consider the legal aspects of the use of standards, their relation to industrial self-government, and their impact on the economy as a whole. Both national and international standards, governmental and voluntary, are discussed in this exhaustive survey.

"This volume has opened a new horizon in management techniques through the eyes of the most noted authorities on standards."

—J. L. CRANWELL, Vice-President, Pennsylvania Railroad Company

The Contributors include:

Comfort A. Adams	**Arthur S. Johnson**
Paul Arnold	**Thomas D. Jolly**
A. V. Astin	**Jules Labarthe**
Robert A. Brady	**Willis S. MacLeod**
Jessie V. Coles	**Harold S. Osborne**
Howard Coonley	**Vera Reck**
E. C. Crittenden	**Walter P. Reuther**
Roger E. Gay	**Willard L. Thorp**
M. Edwin Green	**Edward R. Weidlein**
Herbert Hoover	**Irwin D. Wolf**

American Standards Association
70 East 45th Street, New York 17

Please send me (check enclosed . . . bill me . . . .)
. . . . . copies of NATIONAL STANDARDS IN A MODERN ECONOMY at $5.00 each

Name . . . . . .
Company . . . . . .
Street . . . . . .
City . . . . . Zone . . . . State . . . . .

(Terms for quantity orders available on request)